Genesee Farmer.

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CULTIVATION OF ROOT CROPS.

The general introduction of any new system of agriculture is proverbially slow. We were once on an English farm where seventy-five acres of turnips were grown every year, and the farmer mentioned, as a curious fact, that in the lease of the former occupier there was a clause compelling him to sow *twelve* acres of turnips every year, and this *he considered a great hardship*. Certain it is that he would not have grown so many had it not been one of the conditions of the lease. Now one fourth of the entire arable portion of the farm is occupied with turnips and ruta bagas.

In looking over the back numbers of the *Genesee Farmer* for the last thirty years, we have been struck with the urgent advocacy of root culture. The same is true of the Albany *Cultivator*. The great advantages of root crops have been repeatedly shown, and yet to-day how few grow even roots enough to give their sheep and cows a taste during the winter and early spring months!

From twenty to twenty-four years ago, the cultivation of roots was more warmly advocated by American agricultural writers than at the present time. The lamented Judge Buel especially spoke eloquently in their praise, and through the pages of the *Cultivator* did more than any other man to call the attention of farmers to the subject. He did not, however, confine himself merely to advocating the culture of root crops, but demonstrated practically on his own farm that turnips could be successfully raised in this country. Others were induced to do the same thing, and one can not but be struck with the interest that seems to have been felt on the subject.

Why has this interest abated? We do not say that fewer roots are raised now than formerly, but certainly farmers are less enthusiastic in their praise.

Perhaps they expected too much. Like many other new things, it is not improbable that turnips were landed too highly, and that those who tried them failed to realize their extravagant expectations. Root crops require extra cultivation. An English farmer expends more money and labor on his turnips and ruta bagas than on any other crop in the rotation. At the same time he finds that it is not *directly* profitable. He feeds them out on his farm, and the profits from his cattle and sheep when fed on these crops are not more than the cost of raising the turnips. In fact, as a general rule, we believe there is a loss rather than a profit. *But the manure is valuable.* This is the source of his profits from root culture. Taking into consideration the value of the manure and the effect of their growth and culture on the soil, the cultivation of turnips proves very beneficial. In fact, the turnip has been very justly termed "the sheet-anchor of British agriculture."

A good English farmer once said to the writer, "Insure me a crop of turnips, and I will insure you every other crop in the rotation." The rotation is, first, turnips; second, barley, seeded with clover; third, clover; fourth, wheat; and then turnips again, and so on. A good crop of turnips, eaten on the land by sheep, means good barley and good clover. Good clover means good wheat. The turnips and the clover may not yield much profit, but the extra yield of barley and wheat more than compensates for the great labor and expense bestowed on the turnip crop.

There is felt at this time a renewed interest in the culture of roots in this country and in Canada West. We are anxious that the *true value* of the turnip family should be known—that the source of its profits should be definitely understood. We are satisfied that root culture may be extended with advantage, but the *immediate* profits will not be large. Among the advantages of root culture may be named—

1st. The thorough preparation required, and the use of the horse-hoe between the rows cleans, mellows and enriches the soil.

2d. The growth of turnips and their consumption on the farm furnishes much valuable manure, and thus serves to enrich the soil for subsequent crops.

3d. A large quantity of healthy and succulent food is obtained for the use of sheep and cattle during the winter and early spring months, when such food is much needed.

The drawbacks to root culture in this country are—

1st. Our dry, hot climate is not as favorable to their growth as the moist climate of Great Britain.

2d. We are obliged to put them in cellars or in pits to preserve them through our severe winters.

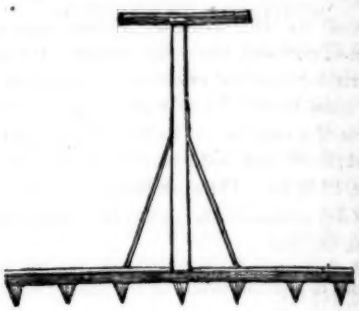
The first objection is, in our mind, not so serious as the second. Good crops *can* be raised in this climate. In Canada West, where much more attention is paid to root culture than with us, as heavy crops of ruta bagas are sometimes raised as in England, and their culture is rapidly increasing. The secret of their success is not any superiority in the climate, but in the thorough preparation of the ground and the subsequent cultivation. They generally plow the land in the fall and again in the spring, with repeated harrowings, till the ground is clean and mellow. Then throw the land into ridges 2½ feet apart, and put a good dressing of well rotted manure in the ridges, and cover by splitting the ridges with a double mould-board plow. Then drill in the seed on the ridges with a drill, having a light roller before and after the seed drill. They sow usually about the middle of June. Sow from one to two lbs. of seed per acre. When the plants are coming into the rough leaf, thin out with the hoe from ten to twelve inches apart, and use the horse-hoe frequently between the rows.

To sow ruta bagas (Swedes) broadcast is a bootless task.

Mangel wurzels are better adapted, we think, to our climate than Swede turnips, and more nutritious. They require very rich soil and good culture, and then large crops can be obtained. They keep well into spring, and are excellent food for milch cows or the ewes with lambs in the spring. They deserve more attention than they have yet received. Prepare the land as for Swedes, and sow about the first of June. Thin out by hand and with the hoe to from twelve to fifteen inches apart. More nutritive matter can be obtained from an acre of mangel wurzels [The name means "scarcity root"] than from any other root crop. But it must have very rich soil, or extra manuring.

The culture of beets is similar to that of mangel wurzels. If raised for sugar, they should be sown on warm, dry land, thoroughly pulverized, and *not too rich*. Small beets contain the largest per centage of sugar. They need not be left more than eight inches apart in the rows. It is better to *earth them up* as they grow, so as to keep all the root under ground.

In Ireland, a dibble is used for making the holes into which the mangel wurzel or beet seeds are dropped. The accompanying figure will render a description unnecessary. Any farmer can make one for himself.



A DIBBLE.

The common white turnip is not as nutritive as the Swede or ruta baga. It will not keep so well through the winter. The English farmers sow them principally to eat off on the land from October to December. It will hardly pay to house them. We think they may be raised in this country on light sandy soils, for the same object, with advantage. They require far less cultivation than the ruta baga. They may be sown broadcast any time in July.

HOLLOW HORN IN CATTLE.—Much has been said and written upon the subject of hollow-horn or horn-distemper; and some persons seem to be so constituted, with such tender feelings and pure morals, that they admonish, if not rebuke, any person who has the temerity (?) to use the easy means of preventing the hollow-horn by cutting off a small piece of the animal's tail once or twice a year. Surely such persons are changeable-minded, or if the raise any cattle of the male kind, they are fully supplied with uncastrated animals. I have raised some cattle, and it is my rule to cut off a small piece of the tail of all my cattle in the spring of the year, just before they go out to pasture, and if at any time during the summer I discover the brush of the tail being curled, or long and twisted, I forthwith cut off half an inch (more or less) of the tail—being careful to cut as little of the hair brush as possible. I have never known an animal to have the horn-ail that was treated in the above described manner.—BELA DUNBAR, *North Chili, N. Y.*

THE VALUE OF POUDRETTE.

A CORRESPONDENT of the *American Agriculturist* says: "It has been estimated that a single individual produces 500 lbs of urine per annum, which Prof. JOHNSTON shows is worth $50 per ton. A village of 1,000 inhabitants would consequently produce 250 tons in a year, which would be worth, at this rate, more than $10,000. The population of New York and Brooklyn would furnish annually for country farms $10,000,000 worth of this fertilizing material, *if* it could be saved for that purpose."

Of all the wild estimates we have seen of the value of nightsoil, this is the wildest. It has been ascertained by actual experiments, that on an average males from 15 to 50 years of age void in the course of a year, fæces, 95 lbs.; liquid, 1,049 lbs. Total, liquid and solid excrement in their fresh state, 1,144 lbs. These contain:

Of *dry substance*—fæces, 23¾ lbs.; urine, 39¼ lbs. Total, 63¼ lbs.

Of *mineral matter*—fæces, 2½ lbs.; urine, 12 lbs. Total, 14½ lbs.

Of *carbon*—fæces, 10 lbs.; urine, 12 lbs. Total, 22 lbs.

Of *nitrogen*—fæces, 1 1-5 lbs.; urine, 10 4-5 lbs. Total, 12 lbs.

Of *phosphates*—fæces, 1¼ lbs.; urine, 4¼ lbs. Total, 5¾ lbs.

In other words, fresh urine contains 96 per cent. of water. One ton contains only 80 lbs. of solid matter. What is this 80 lbs. worth? We all know what the 1,920 lbs. of water is worth. The two together, according to the above estimate, is worth $50. Now, if the water is worth nothing, it follows that the 80 lbs of dry matter in a ton of urine must be worth $50, or over 60 cents per lb.! Is there not some error here? Has not the writer for the *Agriculturist* misunderstood Prof. JOHNSTON? Did not Prof. J. mean that the *dry matter* in urine was worth, if you could get it, $50 per ton? He certainly could not mean that the fresh urine was worth $50 per ton.

Let us see what a ton of fresh urine *contains*, and then we can tell to a certainty what it is worth—or at least we can tell what the ingredients which it contains can be purchased for in other forms.

One ton of fresh urine contains about 20 lbs. of nitrogen, worth 17 cents per lb., or $3.40; 10 lbs. of phosphates, worth 6 cents per lb., or $0.60; 25 lbs. of mineral matter, worth, on a liberal estimate, 50 cents; 25 lbs. carbonaceous matter, worth very little indeed, say 50 cents; and 1,920 lbs. of water, worth *nothing*. So, then, one ton of fresh urine, instead of being worth $50, is worth only $5, and this is a very liberal estimate.

IRRIGATING MEADOWS.

THERE are few subjects which merit the attention of American farmers more than that of irrigation. In many parts of New England, and in the grazing and dairy districts of this State and Pennsylvania, there are thousands of acres of land that might be irrigated in the simplest, easiest and most economical manner possible. We have often been surprised to see small streams of water running to waste while the parched and poverty stricken meadows in the neighborhood, which might easily have been irrigated by this water, produced not more than a ton of hay per acre, and often much less.

In irrigating, as in underdraining, it is frequently necessary for a few neighbors to combine in the work. And this is not always an easy matter to accomplish. In fact, this is one of the greatest difficulties in the way of any plan for the introduction of irrigation. We have no remedy to propose which will overcome this hindrance. All that we can do is to call attention to the great advantages which irrigation would afford in some sections, and endeavor to show that such combinations as we have alluded to would be mutually beneficial.

That irrigation is a great means of increasing the produce of grass lands, will not be disputed. In England we have known many instances where at least three times the amount of hay has been obtained simply by irrigation, with ordinary water, from a small stream that was dammed up and the water conducted in furrows and allowed to flow over the land.

In the last number of the "Journal of the Royal Agricultural Society of England," it is stated that the spring feed alone on the irrigated meadows on the Avon is sometimes let for $40 or $50 per acre, and even $60.

LEVI BARTLETT, in describing the farm of Mr. SANBORN, of New Hampshire, in a recent number of the Albany *Cultivator*, says Mr. S. commenced irrigating his "old mowing fields" about twelve years ago. At that time many of them yielded very scanty crops of grass, not over ten or fifteen cwt. per acre. Now, by the application of water alone, these fields yield two tons of first-rate qual-

ity hay per acre, and those which have been irrigated longest yield the heaviest crops.

Boussingault, the well known French chemist and farmer, considers a good meadow the cheapest means of enriching the farm; and this is undoubtedly true. The extra produce obtained by irrigating grass lands, when fed out to animals, furnishes an extra quantity of manure for the use of the arable upland portions of the farm.

STEEPING BARLEY FOR SHEEP.

In the *Genesee Farmer* for December, 1861, page 365, we stated that in Mr. Lawes' experiments on sheep, "*considerable advantage was found from steeping grain from 24 to 36 hours in cold water, before giving it to the sheep.*"

A correspondent of the *Country Gentleman* makes the following remarks on the subject:

Credit Sometimes Wrongly Given.—Messrs. L. Tucker & Son:—In *Country Gentleman*, vol. 18, No. 23, p. 364, I find an article taken from the *Genesee Farmer*, wherein the author, Mr. Lawes, gives the result of feeding a lot of sheep.

"Four sheep in ten weeks eat 280 lbs. of crushed barley, and gained 81 lbs. Four sheep in an adjoining pen eat in ten weeks 280 lbs. of crushed barley steeped in water, and gained 101½ lbs. This shows a gain of over 20 lbs. in favor of simply steeping in cold water. We must add that the sheep were allowed all the mangel wurzel they would eat, and the pen having the steeped barley consumed much more than the pen having it dry. The former in ten weeks eat 5,321 lbs., while the latter eat only 3,867 lbs. of these roots."

Mr. Lawes in his article, if I understand him, attributes the 20 lbs. gain in one lot of sheep over the other to the steeping of their food in cold water, but to my mind the chances are that the gain was produced by their eating 1,454 lbs. more mangel wurzels than the sheep did that eat their barley dry.

Had Mr. L. given each lot of sheep an equal number of pounds of mangel wurzels, and there had been a gain of 20½ lbs. in favor of the sheep that eat the steeped barley, he might, I think, have more justly attributed it to the steeping of their food. G. P. Serviss.

Mr. Serviss' remarks are to the point. We did not, however, *wholly* "attribute the 20 lbs. gain in the one lot of sheep over the other to the steeping of the food in cold water." In fact, we distinctly stated that the one lot of sheep eat more mangel wurzels than the other. The only conclusions we drew from the experiment are those given in the above extract put in italics, viz., that there was "*considerable advantage*" from steeping the grain. We did not say that the increase was due merely to the steeping of the barley.

The fact is an interesting one, and as such it was mentioned. The only difference in the two lots of sheep was that one eat dry barley, and the other the same amount steeped in cold water. Both had what roots they choose to eat. Those having the steeped barley had a better appetite than the others, eat more roots, and laid on fat more rapidly.

IMPROVING OLD PASTURES.

At a recent agricultural meeting in Cheshire, Eng., Richard Dutton read a paper on the "Agriculture of Cheshire," in which he remarked:

An old pasture-field, rich in good herbage, *should never be brought under the plow*, on a dairy or grazing farm, without an urgent necessity. On our best dry soils, old pastures are apt to become rough, and, in some cases, covered with moss. This may be prevented, to a great extent, by a top-dressing of salt during the winter, at the rate of 10 cwt. per acre; or, in some cases, a good dressing of lime, at the same time freely harrowing the surface; or, what is less expensive, stocking them with sheep during the winter months, at the same time feeding them with turnips or corn. In a very productive summer, or when a farmer has been unfortunate with his stock, he may, with advantage, mow such parts of his pastures as can be spared for the purpose. It is superfluous for me to say that on a very large proportion of our grass lands draining and bone-dusting are the great means of improvement. A question of some importance may be asked: "Are all our clay soils improved by draining for mowing and pasture purposes?" *I think not.* When there is nothing in the herbage produced which indicates the presence of too much water, I think draining will add nothing to the fertility of such soils so long as they are in grass.

Cabbage for Cows.—There can be no doubt that cabbage is an excellent food for cows. It is more nutritious than the white turnip, and will produce more per acre. We think it should be more extensively cultivated, especially by our dairymen. The investigations of Dr. Voelcker show that in the fall of the year milk, when the cows are well fed, yields more cheese and butter than during the summer. But if the cows have not a good supply of nutritious food, the milk falls off greatly. It would seem, therefore, that a supply of cabbage, which could easily be obtained, would prove of great advantage.

Hay for Colts in Summer.—When colts are turned into young, succulent grass in summer, they not unfrequently scour. This can be avoided by giving them a little hay and an occasional feed of grain. The same is true of other stock. It is a well known saying, that "sheep prefer roast meat to boiled." It is a matter of surprise sometimes how well sheep thrive in a dry summer, even in comparatively bare pastures.

"PEDIGREE" WHEAT.

The word "pedigree" has hitherto been applied only to animals, and it can not, in strict propriety, be applied to members of the vegetable kingdom. But we have now a wheat that is "thoroughbred"—one that has a "pedigree," and the use of these terms can no longer be confined to animals.

In the *Genesee Farmer* for October, 1861, p. 297, we alluded to the astonishing results that had been obtained by Mr. F. F. Hallett, of Brighton, England, by carefully "breeding" his seed wheat.

In the last number of the "Journal of the Royal Agricultural Society," Mr. Hallett gives a detailed account of his system of "breeding" wheat, and its results. In the whole range of agricultural science we know of no subject of greater importance, and we are sure the intelligent readers of the *Genesee Farmer* will peruse with the greatest interest some account of Mr. Hallett's experiments.

Mr. H. says it has been his conviction for the past twelve years that a good *pedigree* is as valuable in plants as in animals, and that in the careful rearing of seed which has this qualification lies our only means of materially increasing the produce of the cereals. Amongst animals, whether horses, cattle, sheep, or pigs, the importance of "pedigree" is fully recognized, as also even in reference to some of our agricultural *plants;* for if a farmer wants a good cabbage, mangel wurzel, turnip, or carrot, he selects the seed from a good *parent*, but the moment he deals with the cereals he almost ignores the great principle of like producing like, which he admits, in the foregoing cases, to be not only a right one, but so important as to deserve much attention, and repay much outlay. Yet Mr. H. has proved that the minutest characteristics of a plant of wheat will be reproduced in its descendants; so much so, that we can not only perpetuate the advantages presented to us in an individual ear, but, by the accumulation of selection, make further advances in any desired direction; the union of good qualities imparting a cumulative force, and their successive renewals and establishment conferring, as in animals, a "fixity of type."

The plan of selection pursued by Mr. H. was as follows. He says:

A grain produces a "stool," consisting of many ears. I plant the grains from these ears in such a manner that each ear occupies a row by itself, each of its grains occupying a hole in this row; the holes being 12 inches apart every way. At harvest, after the most careful study and comparison of the stools from all these grains, I select the finest *one*, which I accept as a proof that its parent grain was the best of all, under the peculiar circumstances of that season. This process is repeated annually, starting every year with the *proved* best grain, although the verification of this superiority is not obtained until the following harvest.

During these investigations, no single circumstance has struck me as more forcibly illustrating the necessity for repeated selections than the fact, that *of the grains in the same ear one is found greatly to excel all the others in vital power.*

In illustration of these principles of selection, Mr. H. gives the following results, due to their influence alone,—as the kind of seed, the land, and the system of culture employed were precisely the same for every plant for four successive years; neither was any manure used, nor any artificial means of fostering the plants resorted to.

Table showing the Importance of each additional Generation of Selection.

Year.		Length.	Containing	Number of Ears on finest stool
1857	Original ear	4¾ in.	47 gr.	..
1858	Finest ear	6¾	79	10
1859	Finest ear	7¾	91	22
1860	*Ears imperfect–wet season*	..	..	39
1861	Finest ear	8¾	123	52

Thus, by means of repeated selection *alone*, the length of the ears has been doubled, their *contents* nearly trebled, and the "tillering" power of the seed increased five-fold.

In commencing his experiments, Mr. H. selected ears in reference to their *quality*, rather than size. In 1857, he selected two ears of wheat from a field of red "Nursery wheat" of the first quality. These two ears contained together 87 grains. These 87 grains were planted one foot apart each way. One grain of these 87 produced 10 ears containing each 55, 60, 66, 68, 68, 69, 73, 74, 76 and 79 grains; or 688 grains from one grain sown. The finest 10 ears that could be selected from the *whole* produce of the other 86 grains contained only 598 grains.

This was the harvest of 1858.

In the fall of 1858 the 79 kernels from the best ear were planted one foot apart. One of these grains produced *seventeen* ears (besides five green ones), containing 55, 58, 61, 63, 63, 64, 65, 66, 67, 67, 72, 74, 75, 76, 86, 87 and 91 grains; or a total of 1,190 grains from one.

This was the harvest of 1859.

The 91 grains from the best ear were planted in the fall of 1859. The one that tillered the most produced *thirty-nine* ears, containing 2, 45 grains.

This was the harvest of 1860, which, it will be recollected, was one of the wettest known in England for many years. The crop was so beaten about and injured by the rain that only two ears

ONE OF THE ORIGINAL TWO EARS. AFTER TWO YEARS REPEATED SELECTION.

on this stool were perfect. These contained respectively 71 and 74 grains each.

The 74 grains of the largest ear were planted in the fall of 1860, and one of them produced *fifty-two* ears. The best one of which was 8¾ inches long and contained 123 kernels.

This was the harvest of 1861.

As to the yield per acre, Mr. H. says: "The pedigree wheat planted singly, Sept. 9, 1859, in holes 9 inches apart every way, produced in 1860, notwithstanding the very disastrous character of the season, 1¾ bushels on 698 square feet on unmanured land, or 108 bushels per acre!

Up to this time Mr. H. had not sufficient pedigree wheat to test it on a large scale, and the fall of 1860 was so wet that he could not sow till the last of October—fully six weeks too late for the quantity of seed sown, which was only one peck per acre. Nevertheless, on a field of ten acres, which Mr. H. says "was the worst wheat-field on my farm," he obtained 57 bushels of wheat per acre. Under the circumstances, this is undoubtedly a large yield, and plainly shows that under favorable conditions an immense crop may be raised.

We shall look with great interest to the results of this year's harvest.

We annex a cut of one of the two original ears, and one of the best ear produced in 1859, after two years "breeding." The Journal contains a cut of the best ear obtained in 1861, after four years repeated selection, but it is too long for our columns. It was 8¾ inches long and contained 123 grains, and there were 52 ears on the stool!

BEANS—BEANS—WHO KNOWS 'EM.

Eds. Genesee Farmer:—Most likely you have little room in the *Genesee Farmer* for letters more merry than wise, but your correspondent claims to be p-q-liar in this, that his mind is made as easy whether his letters be printed or not.

Now, beans are a very nice crop to raise, very pretty to look at, and very good for the soil, no doubt, especially if rather heavy, and if you feed out your crop on the farm. But there are doubts in your correspondent's mind as to the profit, if grown for sale, and, if the white bean be planted, as to the feedin' on 'em out.

As to the profit, I have no data as to what is a fair crop, but assume (subject to correction) that forty bushels per acre would be very satisfactory, and, at two dollars per bushel, quite profitable, but for robbing the farm of a large amount of nitrogen. Some years ago, beans sold at $2 and upward, and the price is now high again; but for two or three years back it has been as low as 75 cents, and at that price I think it would not pay to grow them for sale. Again, the culture of beans in small and occasionally in large quantities has been universal.

in the part of the country where I live since its settlement, and is now almost abandoned, except that they are still grown in patches for family use. Why? I can only suppose because corn and potatoes were found more profitable.

Then, as to feeding out white beans. Can you do it? Mind, I don't say you can not; but can you? When beans were beans, a few years ago, I got tired of paying sixteen and eighteen shillings a bushel for them, and determined to assert my independence. So I planted an acre or so (paid eighteen shillings a bushel for the seed), and had a very nice crop, cured it well, threshed them and put them in the granary. Now, thought I, I've beans enough for many years,—bean soup, boiled beans, baked beans, pork and beans—and I shall get back some of the money I have paid for beans. Well, one day along comes a general produce buyer, happens to see my bin of beans, and blandly suggests that they are really very nice beans, and he will take 'em at 75 cents. "Seventy-five cents!" says I, "no, you don't. Corn is worth a dollar, and oats five shillings, and I'll feed 'em first." So I began to offer them to the "kettrypids." I suppose they'd have eaten them at eighteen shillings, but at six shillings it was no go. Not a "kettrypid" but turned up his nose at them. We boiled them, we ground them, we baked them, we made soup of them, we offered them in every way except the very agreeable combination with pork, but it was no use. I had no "alligator" pigs, so the experiment was hardly as complete as could be wished. But I was (dis)satisfied. I had beans for many years, sure enough, and they were, I will say, just as good at four years old as when new. I used up the last just before the price went up again.

Now, I do not say beans are a humbug, and I call you to witness, Messrs. Editors, that I didn't say that 1,200 bushels of carrots per acre were a humbug. (On the contrary, I consider the latter a highly satisfactory—when accomplished, as it sometimes is—fact.) But I should like the privilege of drawing on you at sight for a bushel (or say half a bushel) of English field beans—horse beans—to experiment upon, if you will have it I shall plant beans. I am told that Mr. WAINWRIGHT, of Rhinebeck, grows the English horse bean with good success, but he has gone to the wars—worse luck for his brother farmers, except for those who went with him. P. Q.

REMARKS.—Our esteemed correspondent is one of the best breeders in the State, and his "kettrypeds" have frequently taken prizes at the Fairs. Perhaps they are puffed up with pride and good living, and turn up their noses at plain, wholesome food! Be this as it may, we have abundant evidence that cattle and sheep will eat American white beans and do well on them.

One other point in our correspondent's letter must be alluded to briefly. *Selling* the beans may and does "rob the farm of a large amount of nitrogen." That is to say, the beans *contain* a high per centage (from 4 to 5 per cent.) of this important element, and if the beans are sold, the farm loses just so much of this essence of manure. But on the other hand, it does not follow that the *growth* and sale of beans robs the land of more nitrogen than the growth and sale of corn. The beans contain twice as much nitrogen as corn, and it is believed they derive this nitrogen from the atmosphere, while corn does not. Or, to speak more correctly, it is thought that corn during its growth takes up nitrogen from the soil and *dissipates it through its leaves into the atmosphere.* In other words, it *wastes* ammonia or nitrogen during its growth. Wheat, barley, oats and other cereals are supposed to do the same, while beans, peas, and other leguminous plants *do not waste* ammonia or nitrogen during their growth. It is on this fact, which we have again and again stated, that we base our urgent advocacy of the culture of beans, peas and clover. They enrich the land, while the cereals have a tendency to impoverish it, especially of nitrogen. EDS.

BORROWING TOOLS.

PROBABLY there is no practice that a farmer can pursue that is more reprehensible than that of borrowing farm implements, when he could have them of his own without the least inconvenience. In some particular instances it is proper to borrow—when an implement is broken, or in some emergency where the want of a certain implement could not be foreseen.

My system through life has been to purchase every tool that I had occasion to use, if I had to send ten miles to obtain it, rather than trouble my neighbors. I keep an excess of hoes, shovels, spades, etc., on hand, so that in any emergency I can profitably employ any addition to my hired help.

Some farmers, I suppose, do not own a crowbar, others have but one spade, one shovel, one nail hammer, one handsaw, and that not worth picking up in the road. This is all bad management. You should own every tool or implement that is needed on your premises, and several of those that very often you require to place in the hands of a hired man or two.

You do not know what a bad name you get, by running to your neighbors as often as once a week to borrow something, while you own nothing fit to lend yourselves. T. B. MINER.

Clinton, N. Y.

SUGAR BEETS.—The red mangel wurzel, or sugar beet, is an excellent root crop for cows and cattle of all kinds. Sow early this month in drills 18 in. apart, and leave the beets about 8 inches apart in the rows. A much larger crop can be grown of this root than of carrots, and the cultivation is less expensive, as the crop may be easily pulled in the fall by small boys, while gathering carrots is much more labor.—T. B. M.

SPIRIT OF THE AGRICULTURAL PRESS.

CHEESE PER COW.—A correspondent of the *Country Gentleman* states that his dairy of 24 cows averaged, last year, 650 lbs of cheese per cow.

DEPTH OF GRASS ROOTS.—In reply to an inquiry as to how deep grass roots will penerate, the editor of the *Irish Farmer's Gazette* says "some have been found at a depth of twelve or fourteen feet."

PLANT BEANS.—The *Maine Farmer* seconds our advice to raise beans and adds: "We know of instances where corn and beans mixed and ground have been fed to milch cows with the very best results. Sheep too, can consume them with profit."

LAMBS KILLED BY SWALLOWING WOOL.—A correspondent of the *Irish Farmers' Gazette* says he has lost quite a number of lambs this spring from their eating small particles of wool. He finds the wool in the stomach and bowels with the milk curdled round it.

SHEEP EATING EACH OTHERS WOOL.—A correspondent of the *Country Gentleman* has two flocks of sheep, in one of which the sheep have the habit of eating each others wool to such an extent that they will soon "strip one another naked." The other flock is free from the unfortunate and perplexing habit. He wants to know the cause and cure.

BUCKWHEAT.—A correspondent of the *Country Gentleman* in Clinton, N. Y., says he has a field of ten acres, a part of which has been sown *annually* with buckwheat for the last *thirty years* without manure, and the other part nearly as long. It averages from 25 to 30 bushels per acre. He uses the buckwheat principally for feeding milch cows, three parts buckwheat meal and one part corn meal.

A correspondent of the *Maine Farmer* says a cow belonging to Mr. E. RAMSDELL, of Canaan, dropped a calf this spring that weighed, when four hours old, 121 lbs. Its girth was two feet nine inches, length three feet five inches, and stood two feet eight inches high. The same paper states that Mr. J. O. PAYNE, of China, has a cow which dropped a calf this spring weighing 136 lbs., and girted three feet.

WASHING SHEEP.—The Boston *Cultivator* thinks that so long as the rules which generally govern purchasers prevail the practice of washing sheep will be less followed than it has hitherto been. One reason assigned for this is that the sheep can be shorn earlier. More wool is obtained from shearing early in May, whereas the water is frequently too cold to wash the sheep with safety till the last of May or the first of June.

SOAKING SEED CORN.—A correspondent of the Boston *Cultivator* says that Mr. COBB, of Newton, Mass., has for two years past soaked his seed corn in a solution of chloride of lime and copperas, in equal parts. He thinks a pound of each enough for twenty acres, though if the solution is stronger it will do no harm. He uses hot water enough to cover the seed when soaked, and lets it soak twenty-four hours. Last year Mr. C. planted half an acre of corn with seed thus prepared, on the 16th of June, where the birds had destroyed the first planting. The corn on the fourth day was an inch above ground, and on the fifth day it had three leaves. It assumed a dark green color and grew rapidly, so that at harvest it was only three days later than that of the first planting. When seed is so prepared the birds disturb it but little.

BEES AND ASHES.—L. A. JENKINS says, in the *Wisconsin Farmer*, that bees dislike ashes so much that they will leave their hive when it is placed near an ash heap.

UNRULY CATTLE.—We find the following in the New York *Methodist*:—"An ox or cow that is accustomed to throwing fences, may be prevented doing so by taking a large wire and bending it in the shape of a bow; then bend the points in the shape of a fish-hook; tie two strings to the wire, place the hooks in the nostrils lightly, and tie one string to the point of each horn. This will prevent the most unruly ox or cow from throwing fences."

TRANSPORTING BEES.—A correspondent of the *N. E. Farmer* gives the following directions for transporting bees:—"Spread down a sheet and set the hive on it; then bring up the corners and tie over the top, or invert the hive, and put over the bottom a piece of muslin eighteen inches square, fastened at the corners with carpet tacks. A wagon with elliptic springs is best for conveying them. In all cases, the common box hive should be bottom up, to avoid breaking combs. When moved late in the season, they should be set several feet apart."

HOW TO RAISE PUMPKINS.—T. S. COLTON, of Wisconsin, writes the *Farmer* how he raises pumpkins. He says:—"Take the poorest land in the corn-field; plow deep; mark 12 feet each way; dig holes 1½ feet deep; fill with well-rotted manure; cover with earth 12 inches; then plant. When they begin to run, thin out, so that but two or three remain in a hill. The 25th of May is early enough to plant. One acre cultivated in this way will produce more than ten acres with corn. Last season I had 31 pumpkins from one sprout—averaging 20 lbs. each, or 620 lbs. from the vine!"

A CROSS BETWEEN THE SOUTH DOWN AND LONG WOOLS.—A correspondent of the *Maine Farmer* says it is "universally known that he prefers a cross between an improved South Down ram and a large long wooled sheep. He had 40 such ewes last fall, and now (April 21,) thirty of them have 40 lambs by their side, and ten more to lamb. One pair of twins weighed, when dropped, 18 lbs; and a single one, dropped the day he wrote, weighed 11½ lbs." A cross between a thorough bred South Down and common long wooled sheep is undoubtedly good. If both were thorough bred we should prefer to keep them pure.

HORSES WILL BE WANTED.—The *Wisconsin Farmer* well remarks, "it is inevitable that horses should be in greater demand than for years before the war. Immense numbers will be killed, crippled, and used up, while the uses to which they have been accustomed to be put, will be in no respect diminished. It would be well to breed extensively, and from horses of the best blood. The policy which prompts so many of our farmers to employ cheap 'stock horses,' is of the same class with that which would recommend an inferior quality of seed because of a less price. It costs no more to raise a fine animal than a mean and worthless scrub."

MORGAN HORSE FOR ENGLAND.—The Lewiston (Me.) *Journal* states that a Morgan mare has been purchased in that neighborhood for a gentleman in Liverpool, England. The price paid was $800. She has trotted her mile in 2:50.

VARNISHING CHEESE.—A writer in the *Dairy Farmer* states that it is the practice of some dairymen to coat each cheese thinly with a varnish made from shellac dissolved in alcohol, when about to be shipped for market. It is said to improve the appearance of the cheese and to keep it from losing weight and gathering mold.

RAT-KILLING ASSOCIATION.—We have before alluded to the fact that a rat-killing association had been formed in Pickaway county, Ohio. It appears from the Circleville *Watchman* that last season the association, consisting of forty-two persons, killed 17,370 rats, or an average of 413 to each man engaged in the hunt! The *Watchman* estimates that these rats would have eaten 35,000 bushels of grain.

BIG CALVES, LAMBS, PIGS, ETC.—Correspondents of the *Maine Farmer* are telling big stories of wonderful calves, lambs, pigs, etc. One had a calf that weighed, as soon as it was dropped, 109 lbs.; another had one that weighed 120 lbs.; another had a cow that dropped four calves this spring, and the year previous three calves. Another had a lamb which weighed 11¼ lbs. at birth, and 29¾ lbs. when 31 days old. It was half Cotswold.

A HEN COVERED UP ALL WINTER.—The Keene *Sentinel* says a hen was discovered under a girt in a barn in that town, on the 28th of March last, where she had been accidentally covered up with clover hay about the 10th of July—having lain there nearly nine months without anything to moisten her throat but the snow that fell near crevices of the barn in winter. The hen was found alive, but much emaciated, and she "still lives."

SCOURS IN LAMBS.—A correspondent of the London *Mark Lane Express* says he has lost for the last two years one-fifth of his flock of lambs from scours, and after due reflection he has come to the conclusion that one great cause of the disease *is pasturing the lambs in a field that has been heavily stocked with sheep the previous season.* The remedy he suggests is, as soon as the symptoms appear, to give them grain and oilcake, well salted, and change their pastures frequently—as often as once a day, if possible.

OATS SHOULD BE SOWN THICK.—J. D. G. NELSON, of Indiana, writes to the *Country Gentleman* that he formerly sowed two bushels of seed oats per acre, and was glad to get a return of thirty or forty bushels. Now he sows never less than three and generally four bushels per acre, and if the land is very rich, moist and abounding in vegetable mould, he sows even more. He now gets fifty to seventy bushels per acre, and is never troubled with weeds. When he sowed thin, the oats frequently lodged, and were full of weeds.

A TROT ON THE ICE.—W. W. MOORE, of Crown Point, N. Y., writes the *N. E. Farmer* as follows: "A trot came off on the 14th of April, on the ice, between the black mare Fanny Barret, of this town, and bay mare Green Mountain Queen, of Bridgeport, Vermont. The town of Crown Point is situated on Lake Champlain, on the New York side, and Bridgeport on the Vermont side. The trot was on Lake Champlain between the two places. There was a large number of people on the ice to witness this trot, attracted there not so much to witness the speed of these two beautiful 'nags'—but the idea of a trot upon the ice on the 14th day of April excited the curiosity, and for that reason much interest was taken. The mares made a good race, but the result become a disputed point, and was finally left unsettled. Years will roll away before the people in this vicinity will again witness a scene so novel and rare, as a horse trot upon the ice on Lake Champlain on the 14th of April."

HOGS IN CHICAGO.—The Report of the Board of Trade of Chicago shows that the number of live and dressed hogs received in that city during 1861 was 675,902. This is 135,516 more than in any former year.

TO MAKE SOWS OWN THEIR YOUNG.—A correspondent of the Boston *Cultivator* says that he had a sow which would not own her pigs, and that after trying various things without effect, he gave her *a pint of rum*, which had the desired result. The rum was put into the swill, and, he says, "she drank it like any old toper, and was perfectly quiet for three or four hours afterward." The *Maine Farmer* says the same prescription will prevent sows from eating their young. We suppose the rum makes them feel comfortable.

COLD WATER FOR BURNS.—Mr. SETH HUNT, of Northampton, gives, in an exchange, the following statement of the success of treating with cold water a severe burn and scald in his family: "Cold water was applied by immersion, till the pain ceased; the water being changed as often as it became warm. The part was then kept swathed with wet bandages, a dry woolen one enveloping them, until the injury was healed. The healing was rapid, and effected without leaving a scar. The instant relief which the cold water gave from the excruciating pain, was highly gratifying."

HOW TO PROVE THE VITALITY OF EGGS.—DR BERRI, Rye, N. Y., writes to the *American Agriculturist:* "It is emphatically 'Love's labor lost' to set a hen on eggs lacking vitality. For some years I have generally been successful in 'counting my chickens before they were hatched.' About the second week in March I selected fresh eggs of medium size, and set as many hens as possible at the same time. After three days, examine the eggs at night with a light, those having the embryo chick will appear dark, while those lacking vitality will look as clear as ever. Remove them, as they will not hatch, but are still fit for family use. Transfer the good eggs from one nest to another to make up deficiencies, and give the robbed hens fresh eggs."

RED AND WHITE CLOVER FOR BEES.—The *Bee Journal* (now discontinued) says: "When it happens that bees can not gather honey from other sources, while the red clover is in blossom, they will occasionally resort to this plant for supplies. But they find it difficult to accomplish their object, because the tube of the blossom is so long and narrow, that they can not reach the nectaries in the usual manner. They can only gain access to them

through a slit in the tube, situated between the calyx and the corolla. The tube has only two such slits, and the bees are not always successful in their efforts to extract the nectar through them. The humble bees, having the advantage of a longer proboscis, readily reach the nectar through the mouth of the tube. The blossoms of white clover, as well as those of white and yellow melilot, have short tubes, and the bees encounter no difficulty in extracting the honey through them."

MANAGEMENT OF HONEY BEES.

The past winter, though very mild and favorable to bees with plenty of stores, has been exceedingly disastrous to all stocks short of honey. In some cases, more than half the number of families on hand in December last have perished. Even the most experienced bee keepers have lost largely, owing to the mild winter causing the bees to consume their stored honey much faster than is the case in colder seasons.

The only remedy against such losses is to feed all the families which have not stored up an abundant supply, liberally in the months of October and November, on mild, warm days. But then comes the question, *Does it pay to feed bees in the fall?* My experience is that it does pay, if but a few pounds of honey or sirup of sugar are required for each family, and the feeding can be done without attracting all the bees in the neighborhood—which it requires considerable experience to do.

The next question is, should each family be fed separately, or should the Bees of the entire apiary be fed in common?

Though this subject is not particularly in season now, perhaps it will be as well to dwell on it sufficiently to give my readers the benefit of my general experience on that especial point.

Feeding a large apiary, say forty or fifty hives, would require—if fed in common—five or six shallow boxes, about two feet long by six to eight inches wide, with a float made to fit closely to each, made of half-inch board, and either bored thickly with a gimlet, or sawed in narrow cuts to near the centre, and the slits cut out on both sides to enable the bees to extract with facility the honey which will rise into these channels. If the float is bored the holes should be burnt out a little with a hot iron, to make them smooth.

Now we will proceed to feed said forty or fifty stocks on some warm, sunny day in October. We want the job done in "double quick time," so as to attract as few of our neighbors' bees as possible; and in order to trail the bees to the honey speedily—as it sometimes takes half a day to let them know that the boxes contain honey, so as to draw them out in full force—the previous day we will place a few empty combs in the places where we intend to set the boxes, and either fill the cells with strained honey or sirup made of sugar, simply sufficient to draw out the bees to these places in search of food; and the next day, as soon as the boxes are brought out—not before 9 or 10 o'clock—the bees will immediately find the supply, and in two hours every box will be empty, though each were to contain three gallons of honey or sirup. Yes, it is a fact that fifty families of bees in a *single day* would, if an opportunity were afforded them, and if they had combs to store it in, carry fifty gallons of honey into their hives.

Now, if a full supply be afforded at one filling of the boxes, I think but little honey would be carried off by neighboring bees. Every family with but little honey stored up, would require from one to two gallons of honey, or from 10 to 20 lbs., to carry it through the winter. The cost of a gallon of strained honey—such as comes from the West Indies—is about 75 cents to $1; and a gallon of sugar syrup—white coffee sugar is best—is about 80 cents. But the honey is best, and, at $1 per gallon, should be preferred. So it will cost from 80 cents to $2 per hive to save most of the bees that perish in the winter season for want of food.

But feeding in common has this disadvantage: The strong families that already have enough, will take more honey than the weak ones, which alone require feeding. This is rather a serious drawback to the system, and some bee keepers may find it quite too unprofitable to practice it.

Feeding the weak families—such as are short of honey—by themselves is, perhaps, the best way. This is done in various ways; but great care is necessary to avoid attracting other families to the hives fed, which leads to robberies, if the fed families be weak in population. If honey in the comb be placed in the supers of the hives—where the boxes for the surplus honey are placed—the bees will take away no more than their present necessities require, and will leave the balance for winter use—which would be right if the weather were not often so cold that they can not ascend into these supers to obtain it, and consequently perish. If strained honey or sirup be placed in the supers in shallow boxes or pans, with floats upon them, perforated as before stated, the bees will carry it down into their cells and store it there, which is a safer way of feeding weak families than with comb honey.

Some apiarians attach a covered box containing honey to the side of the hive, with a tin tube to connect with the combs in about the centre of the hive. This is a good plan, and does not attract other bees much if the boxes are tightly closed.

Another method, is to make boxes open at both ends, about eight inches deep and of the same size as the hives. These boxes are placed upon the hive stands at the close of the day, and boxes of honey or sirup placed in them, and the hives raised and set upon them, closing the passage ways to keep out the bees of other hives in the day time. The bees in hives thus fed should not be allowed to come out till they have carried up the honey in the boxes, as other bees are sure to enter and carry off this honey, if allowed an opening.

It is a good plan to attach some covering over these boxes, raised about an inch from their tops, to catch the droppings of the bees while engaged in storing the honey. Bees are very neat in their habits, and if the fed honey becomes covered with particles of comb and other foul matter, they will not store it up as freely as they do under other circumstances.

T. B. MINER.

Clinton, N. Y.

LETTER FROM SAMUEL WILLIAMS.

Our old friend and correspondent, Samuel Williams, of Waterloo, N. Y., writes us a pleasant gossipping letter, which, though not designed for publication, will be read with interest.

You now begin to have your reward for being the first to expose Mapes' frauds on the farmers, but it will be some time yet before the majority of them will know much about it. Methinks Joseph Harris, with his plot experiments, and Johnson and Pugh, with their manure estimates, must do the "state some service."

Your remarks on the seed of the potato are very interesting. You may get earlier potatoes from the seed ends, but I always get larger and better ones when I throw away the seed ends. Cut a good sized potato, two seed eyes to a piece, and plant ten inches apart in the drill; but my rich clay garden soil gives more weight of stalks than potatoes, hence I plant only a few early ones.

I grow pole beans only. I have an improved kidney (find four enclosed for one pole). They hang in clusters, eight and nine in a pod, yielding twice the quantity of the pole cranberry, or the large flowering bean.

Joseph Wright has just received his seed corn from Illinois. There is positive proof that he gets one-third more grain from this corn, on the same soil. Cutting those large stalks by horse power to feed will only pay when hay is dear, and you have, as he has, plenty of help.

My wife says, after reading your Bement egg-preserving essay, that she has tried both lime-water and grease, but that her best success is to pack them fresh in good dry salt, in stone crocks, and keep them in a cool, dry basement cellar. They kept well over six months.

A small ration of beets and carrots is relished by a cow, and it undoubtedly contributes to the digestion of the hay; but my still-fed cow soon cloys of them, and is greedy only for fine, early cut hay and bad potatoes.

If I should tell a farmer how many mangel wurzel beets I got from three square rods, he would call it a fish story.

I have been trying to grow tomato plants in pots in the house—a bootless task, unless you use swamp muck, and harden them by exposure to outside air.

But no man knows, who has not tried it, what a treasure this muck is to both a clay and sand soil. Taylor, our new nurseryman, at my instance paid $40 an acre for four acres, 1½ miles north. The muck is seven feet deep, is dug late in the season in dry weather, and hauled in in winter. It is chiefly a deciduous leaf mould, and not a poor, sandy, hemlock swamp mould.

I like your "Walks and Talks in the Garden." Those only who use swamp muck freely on their borders have fine verbenas, etc.; even a daffodil puts on a more joyful bloom in such a border.

Lima beans grown here are small, and no richer than other beans. I plant no more of them.

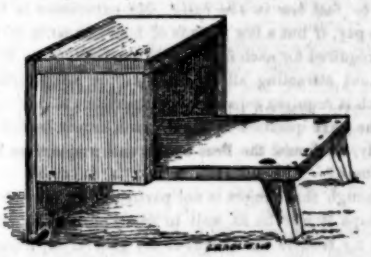
Growing sweet potatoes is about as bootless; yet Mr. Cook has sent to Ohio for one thousand plants, to plant himself and give away, but I'll not bother with such a gift.

I plant sweet corn to-morrow (May 2). Peas and onions ready to hoe. I have hardly time to read the sensation news now, but to-day the soil is too wet for the spade or hoe.

MILKING STOOL FOR KICKING COWS.

A short time since we gave our method of milking, advising to sit close up to the cow, holding the pail firmly between the knees, and not to put the head into the flank, as it commonly done. In this way we have seldom had the pail upset by a kicking cow. A correspondent of the Iowa *Homestead* gives the following description of a stool to use in milking kicking cows, and says:

Most people use the old fashioned milking stool, with three or four legs, which just answers the purpose for the milker to sit upon, and affords no security to the milk or pail, except to set the latter upon the ground in front of the milker, where it is liable to be upset by a kicking cow; or to hold it between the milker's knees. There is a much more convenient form for a stool than that, which may be made out of inch boards, as represented in the cut. Upon this stool the milker has room to



MILKING STOOL.

sit, and at the same time to have sufficient room upon the point end for the milk pail to stand upon, making altogether a kind of two-story stool. Bring the pail between the knees of the milker, where it can be held securely without much effort. The milker should, if the cow is a kicking one, set the front part of the stool, with the pail upon it, directly under the udder. as if milking a gentle cow, and at the same time press his left knee gently and constantly against the cow's right, hind leg, holding the pail firmly between his knees; and if the cow should kick with the right foot, let him keep his position, and grasp the leg of the cow, as she raises it, and prevent her from throwing it forward; or at least compel her to throw it so far toward the other hind leg, and away from the pail, as to cause no injury or loss of milk. A firm grasp in that way, for a few times, will certainly cure a kicking cow, as it gives the milker complete control over her, and she soon becomes convinced that you are her master. We have had a little practice in the matter, and speak advisedly. The stool can be made in twenty minutes; and besides being a convenient one for kicking cows, it is a very useful affair for a gentle cow, as the pail is kept free from the mud, and close to the udder, thus preventing any waste of milk, by milking over, etc.

TOP-DRESSING GRASS LANDS.

Levi Bartlett contributes an interesting article on this subject to the *Country Gentleman*. After alluding to the importance of the subject, he says:

Among the most important experiments in top-dressing grass lands with different fertilizers, those of Messrs. Lawes and Gilbert, of Rothamstead, Eng., take precedence. "The land selected for the experiments comprised about six acres of the park of Rothamstead, and it had been under permanent grass for certainly more than a century. Early in 1856, nine plots of half an acre each were measured off, for as many different combinations of so-called artificial manuring substances; two of an acre each to be continuously unmanured, and two of a quarter of an acre each, to be manured annually with farm dung."

We can not here go into the particulars of the whole series of the different plots and fertilizers, but must content ourselves with some of the general results arrived at by Messrs. L. and G., viz: Where purely mineral manures were used, they greatly increased the growth of leguminous plants (clovers), with very little increase of the true or long-leaved grasses. Where the purely ammoniacal salts were applied, the effect was to much increase the graminaceous or long-leaved grasses, without at all increasing the growth of clover. Where a mixture of both mineral and ammoniacal manures were applied, the increase of hay was very striking, over that on the plots receiving the two kinds separately.

It was found that although the ammoniacal salts when used alone, gave an annual increase of only eleven cwt. of hay, the same amount of ammoniacal salts, when in conjunction with the "mixed mineral manure" (plot ten), gave an annual increase of one ton, fifteen and three-eights cwt. of hay. That the combination of ammoniacal salts and the mixed mineral manure gave more than three times as much increase as the ammoniacal salts alone, and four times as much as the mineral manure alone. The average annual produce by the mixture of the ammoniacal salts and mineral manure, amounted in fact to within less than a hundred weight of three tons of hay per acre, by the side of one ton, four cwt. per acre on the continuously unmanured land.

The above statements seem to point out pretty conclusively, that for the greatest increase of our farm crops, the manures applied should contain all the necessary ingredients of the crops, both organic and inorganic, of which good farm-yard manure is the "type." The above may be laid down as a general rule. to which there may possibly be some exceptions—as in the cases of superphosphate of lime for the turnip plant, and ammonia for the wheat plant. But the farmer who depends upon raising maximum crops, and keeping up the fertility of his soil for any great length of time, by the continued use of either class of manures alone, will ultimately find his system of manuring has been a bad one.

"Among the most interesting of the points incidentally brought out by the experiments, is the striking confirmation which the results afford of the (so to speak) special adaptation, in a course of practical agriculture, of certain of the crops of our rotations, according as they belong to one or the other of the two great families of plants," the *leguminous*—clover, lucerne, peas and beans; and the *graminaceous*—wheat, barley, rye, timothy, and other long-leaved or natural grasses. The "interesting points" brought out were, that the application of the mineral manure alone greatly increased the clovers without anything like a corresponding increase of the natural grasses; while the effect of the ammoniacal manures was exactly the reverse. And, where the two kinds of manures were used conjointly, "the produce consisted almost exclusively of graminaceous plants. There was scarcely a clover or any other leguminous plant to be found on the plot."

The past season Mr. Harris, of the *Genesee Farmer*, experimented on grass lands with several kinds of fertilizers, both organic and inorganic, alone and mixed. The application of the several kinds of manure exhibited similar results to those obtained by Messrs. Lawes and Gilbert, viz,, "the plots that were dressed with ammonia, superphosphate of lime, and unleached ashes, gave a very much greater quantity of produce than any others." There is one fact that we must not forget to mention. The superphosphate and ashes on plot No. 6, *brought in a large quantity of red clover*. The effect in this particular was very marked. On plot No. 7. with ashes and plaster, there was also a little clover, but not one-tenth as much as from the superphosphate and ashes." The field experimented on was a timothy meadow, six years from seeding. Mr. H. does not attempt to draw any conclusions from the results, intending to repeat the experiments next season.

The "Transactions of the Essex Ag. Society, 1861," contain an interesting statement on top-dressing grass lands, by Richard S. Rogers, Esq., of South Danvers. He says, "There is no subject in agriculture deserving of more inquiry, and of greater importance to the farming interest, than the knowledge of the best kind of fertilizers to be used for top-dressing grass lands. As yet but little is actually known by which to arrive at any practical results for obtaining the largest crops of grass.

"The desire of knowing something more definite and practical on this interesting subject, induced me last season to institute in a small way a series of experiments, in the hope that I might derive some benefit myself, and be useful to others. Accordingly, in April, 1860, I selected a field best adapted to the purpose—very uniform in the sward, free from shade and other objections—and staked out five several lots, each measuring 250 feet long by 45 feet wide, and top-dressed with the various fertilizers, as follows:

No. 1.—2 cords of manure, well rotted and mixed with 1½ horse carts of soil.

No. 2.—120 bushels leached wood ashes.

No. 3.—2 cords green cow manure, the droppings of only a few days before.

No. 4.—80 bushels unleached or dry wood ashes.

No. 5.—225 lbs. of Peruvian guano, mixed with 1½ horse carts of brook mud.

"The cost and value of the top-dressing for each lot was as near $10 as possible. The grass was carefully cut and made—the first crop in July,

the second in September—and accurately weighed, yielding as follows."

Mr. R. gives, in his report, well arranged tables of figures, showing the weight of dried hay of 1st and 2d crops on each plot for the two years, 1860 and 1861. But for want of space we omit his figures, and give some of the more important facts elicited.

The weight of hay on each plot for two years, was as follows, viz., compost, 3,260 lbs.; leached ashes, 2,520 lbs.; green cow manure, 3,350 lbs.; dry ashes 3,340 lbs.; guano, 2,240 lbs. The compost giving the least yield; green cow manure the greatest, but only 10 lbs. more than the dry ashes. The guano dressed lot in 1861, on its first cutting, gave only 730 lbs., against 1,300 lbs. in 1860. The dry ashes very much increased the crop, the second year giving 1,350 lbs. at the first cutting, against 900 lbs. the first year. "The green cow manure did well both seasons. The leached ashes likewise did well."

"The Peruvian guano is a *great stimulant*, and can be used for some purposes to great advantage, but as a durable or permanent top-dressing for grass, excepting for one crop, I should doubt its efficiency."

Mr. R. says: "Having turned my attention very particularly to top-dressing my grass lands for several years past, I may be permitted to speak very confidently of the great advantage to be derived from practicing it, and perhaps have realized as much benefit as any one from pursuing it."

We think if Mr. ROGERS had left a plot of ground adjoining, of the same size, without manure, contrasting the yield with the manured plots, the "profit or loss" of the several different applications of manure would have been more accurately determined. We should also have been glad to have learned whether the growth of clover was greater on the plots receiving the ashes than on those that were top-dressed with the guano and green cow manure.

That the green cow manure should cause a yield of hay so much greater than the same quantity of well rotted manure, no doubt may surprise some persons—a fact widely at variance with the general practice and theory of farmers, but *facts* are what are wanted. Of the correctness of Mr. R.'s statements and figures, there can not be a shadow of doubt.

In C. L. FLINT'S Agriculture of Massachusetts for 1857 and 1858, we find the statements of H. J. HODGES on the use of different fertilizers on grass lands. "In April, 1857, staked off seven half acre lots on the Hampshire, Franklin and Hampden Ag. Society's grounds at Northampton. Each lot was of precisely the same quality of soil and in the same condition, and in grass, timothy, red and white clover; six of the seven lots received a top-dressing, each with a different fertilizer, having one lot without any. Each lot was mowed at the same time, and managed alike, and the hay upon each weighed separately. The soil is a loam with sand and clay so well mixed that good judges disagree whether to call it *sandy* loam or *clay* loam—it is a cold land, and retains moisture late in the spring. The treatment of the lots was as follows:

Lot No. 1, no manure; No. 2, poudrette, 2 barrels; No. 3, plaster, 500 lbs.; No. 4, superphosphate, 150 lbs.; No. 5, horse and cow manure, 4 loads; No. 6, ashes, 10 bushels; No. 7, guano, 158 lbs. Mr. HODGES gives a table of figures, showing the cost of the fertilizers; quantity of hay first and second mowing of both years, total value of hay at $6 per ton, increase of hay from fertilizers first year, with the loss or gain first year from fertilizers.

The tables show that ashes is the only profitable fertilizer to be used as a top-dressing *here*. For the two years the increase of hay is much the greatest, and the only lot on which the increase of hay paid for the fertiltzer the first year, and the increase of hay did not pay for fertilizer on any other lot for the two years. The lot where guano was used, gave greatest increase of hay for first year, but ashes did for second. Mr. H. very sensibly remarks, "it is not to be supposed that the same result would follow from all soils."

By his figures, there appears to be a loss on all the fertilizers, ranging all the way from 74 cents to $6.44 for the first year, except on ashes; here there was a gain of $2.19. Why there should be such a similarity of action by the ashes in Mr. ROGERS' and Mr. HODGES' experiments, and such a wide difference in that of the cow manure in the two experiments, is to us inexplicable. It is true we do not know how much a plot of Mr. R.'s ground *unmanured* would have yielded. The plot the first year with the compost gave 1,170 lbs. of hay; that with cow manure gave 1,600 lbs. The same plot second year gave 1,750 lbs., while the guanoed plot same year yielded but 870 lbs.

In some places hay is worth, as put down by Mr. HODGES, but $6 per ton; in others $12 per ton; in others $18, or more per ton. At the last named price, the figures would have presented quite a different face from that exhibited by Mr. HODGES in his tables.

To the importance of the hay crop in regions where farm stock must be fed from the barn from five to seven months each year, we have already alluded. Census statistics show that there has been a very great reduction in the number of horses, cattle and sheep in some of the Northern States within the past twenty years. This decrease of farm stock probably is mostly due to a corresponding decrease of *hay;* if so, then it is a matter of high importance that means should be taken to increase it. This can be largely effected by top-dressing and irrigating grass lands. The statements quoted in regard to the first method we admit do not establish any general rule that will economically apply in all cases, seasons and soils. We have experimented to some extent in the use of both composted and green manure, both in spring and autumn, and always with satisfactory results. After spreading the manure we have usually sown grass seed—from one-third to one-half as much as if newly stocking down to grass—and then have thoroughly harrowed the ground, and sometimes have followed the harrowing with hand rakes, clearing off any obstructions that might interfere with the subsequent mowing and raking.

On many farms there are patches and plots of grass lands, yielding light crops of hay, that can not well and profitably be plowed and cultivated, arising from the rocky nature of the land, or wetness of the soil, or from the distance of the field

from the barn. Such fields can frequently be top-dressed or irrigated to the best advantage, and the interests of the owners of such should prompt them to experiment in one or the other of the above named ways.

NOTES ON BACK NUMBERS.

Eds. Genesee Farmer:—In looking over a volume of the Connecticut *Homestead*, for 1855, I find an article accredited to your valuable paper upon

Milch Cows and Calves—It which it is stated that "the first milk should be drawn out of the bag before the calf sucks." The writer's name is not given, hence I am unable to learn its author—that is, whether it is editorial or not; but, as far as the proposition is concerned at present, it will make but little difference. Still, when an article is taken from one agricultural paper and published in another, it would be satisfactory to have the writer's name, when given, appear with the selected article. But to the point. Is it according to nature's law to deprive the calf of the first drawn milk or beastlings? Is not this milk just what the calf wants to clean out and set into healthy action the whole alimentary canal? Says Youatt, after advising that the calf should remain with its mother till the milk is suitable for use, "The farmer acts wrongly when he throws away, as he is too much in the habit of doing, the beastlings, or first milk of the cow," because it is that "which nature has given an aperient property" to carry off "the black and glutinous fœces" which always accumulate in the intestines before parturition.

Sowing Clover Seed.—Your remarks upon this, in the April number, are to the point, and ought to be read and re-read by a large proportion of farmers, till its teachings are as familiar as "household words," so that the echo of their own steps would sound in their ears as though the walls were chanting, *Sow more clover, sow more clover!*

In respect to the amount per acre, I think you have set it rather too low, though it grows so bountifully under many unfavorable circumstances. Eight to ten lbs. used to be the usual amount per acre here, but farmers now put in fifteen to twenty lbs. per acre as frequently as they used to ten; and besides, those who raise it and seed as they think land ought to be, quite generally put in twenty to thirty lbs with four to eight quarts of timothy per acre, when it is intended to raise seed a year or two and then to be cut for hay. I have known twenty-five lbs. seeding to give two hundred to three hundred lbs. of seed, when half the seed, on just the same quality of land, side by side, other things being equal, would not give half the amount, and this repeatedly. It is found to hold out longer and to yield a fine nutritious hay where twenty lbs. and more is put on with timothy. The timothy will not show itself much the first, and perhaps the second, year, it is true, when the clover does well, but after this the two will be about equal. It is an object to seed down land, where it is not shitable for tilling, for durability, and this is accomplished by sowing bountifully of several kinds of seed.

Potatoes for Horses.—"Are raw postatoes wholesome food for an idle horse?" is given out for farmers to answer if they please. "Inquiries and Answers" is a useful feature, growing more in repute. They are generally perused next to the war news, it seems, and well it is so.

For an occasional feed, say once or twice a week, when a horse is fed on dry feed, they are a good change, but for daily use for an idle or working horse they have not been found so desirable a feed for the horse as for neat stock or sheep. Were I feeding coarse, dry feed to a horse, I should prefer a few potatoes to all corn, at one-fourth the price; but if the feed was to be good English hay, I should take the corn; and farther, I should, as a general thing, rather have the same value in oats than in corn. Let the farmers and those who have used horses to hard labor and tried different kinds of feed, speak forth upon thts question, because it is one of importance to a large class of laborers.

Lice on Cattle.—What kind of kerosene oil they have elsewhere, I know not, but such as is made in Maine will kill lice on cattle sure, and just as sure will it take the hair and outer skin (epidermis) off as it is put on sufficiently to kill the lice. I saw it recommended a year and a half ago, and tried it on cows and calves very carefully, fearing its effects, and have seen it tried this past winter, and wherever it was tried it made clean work. The hair grows out in due time. Why this difference in experience with this oil? O. W. True.

Rural Home, near Phillips, Maine.

Receipts for Hard Soap.—In reply the inquiry of D. E. Davis, in the may number of the *Genesee Former*, I send you the following receipts for making hard soap:

1. 6 lbs. washing soda, 6 lbs. fat, 3 lbs. unslacked lime, 1 teacupful fine salt, and 5 gallons soft water. Put the soda and lime in a tub, and pour over them the water boiling hot. Stir to dissolve. Let it stand until it is clear and all dissolved, then pour off the clear liquid. Add the fat and salt and boil all together four hours. Then pour into pans or deep dishes to cool. Then cut out into bars or squares to harden.

Tallow makes the most beautiful white soap. There should be very little of the sediment left after the liquid is poured from the lime and soda. The sediment left is a purifier of sinks, etc.

2. To Make Soap without Grease.—1 lb. rosin soap, 1 lb. sal soda, 1 oz. borax. Dissolve the soda and borax in 4 quarts of rain or soft water. Then add the soap, and boil until dissolved. Pour out to cool. Cut in bars.

The above first receipt has been tried, and will make more than 30 lbs. of excellent white hard soap, at a very small cost. To the farmer, the outlay will only be for soda, 24 cents. Perhaps the addition of 6 oz. of borax would be a great improvement, as borax is good for washing clothes and hands. Any one can try for themselves.—A Subscriber.

A Cure for Fistula.—One ounce sal ammoniac, one-fourth lb. of May apple root, one-half lb. of lard. Pound the root fine. Put all together and fry on a slow fire about half an hour. Rub on the sore, and heat with an iron. Two or thres applications will effect a cure.—J. W.

WALKS AND TALKS IN THE GARDEN.—No. II.

"We *do* want rain. A few things are suffering, but I do not like to own it. It is a bad sign when a farmer, or gardener complains of dry weather. When I first went to Rothamsted Mr. Lawes asked me about my father's farm, the crops we raised, yield, &c. I told him it was a light, warm soil and produced well *in wet seasons*. He quietly remarked 'I fear your father is a poor farmer.' 'A good farmer,' he said, 'always dreads a wet season.' By a good farmer he meant a 'high farmer'—one who manured highly and kept a large stock feeding on oil-cake, clover, &c. Lawes was right. Make the land rich, keep it clean and mellow and drought will seldom injure it."

"The trouble is you can't get a gardener that likes to use the hoe. Most of them prefer to rake and make things smooth. I sometimes feel like banishing the rake from the garden. This dry weather is just what we want to destroy weeds. Even this abominable chickweed will die if cut off while it is so hot and dry. You can't hoe too much unless the soil is exceedingly sandy. A rather stiff soil that is apt to bake in dry weather, should be hoed—I was going to say everyday, but that is asking too much. However, it can't be hoed too often. Those who have not tried it will be surprised to see how things will grow if the hoe is constantly used. A weed never ought to be seen in a garden after the first of June. Keep the ground so thoroughly hoed that they have no chance to grow. Don't let the weeds get the start of you. Weeds are like fire 'a good servant but a bad master.' They are sent as an incentive to hoe—to stir the ground, to let in the sunshine and air, and dews, and rain, and thus warm and enrich, and water it. But let the weeds get the start of you and it is difficult to get them under."

"The worms are on the currant and gooseberry bushes already. Look how nicely the eggs are glued to the undersides of the leaves. A few days of this warm weather will hatch them, and then the caterpillar will soon strip the bushes of foliage if not checked in some way."

"Nonsense. A sensible man like you ought not to talk of giving up the culture of anything merely because it is attacked by insects or fungus. I would like to know what plant, or shrub, or tree is exempt from them. In the Garden of Eden there were no insects or weeds, but no garden since has been exempt. In a new country there are so many discomforts that nature provides some slight compensation by allowing the first settlers a short period of comparative exemption from insects injurious to their crops. As he gets good roads, good markets and other advantages of a settled community are obtained, the bugs and worms, and beetles, and flies innumerable come in to render increasing vigilance still necessary. This gooseberry saw-fly is no new thing. It has been known in England for centuries. It can be destroyed, or rather so far kept under as to do comparatively little damage. The most approved remedy in England is to dust the bushes with Black Hillebore powder."

"Another good plan is to train the bushes on a single stem, and then you can shake off a good many of the caterpillars and destroy them, or by putting a little tarred cotton round the stem prevent them from crawling up again."

"It first attacked the currant bushes to any extent in this vicinity in 1858, and in the *Genesee Farmer* for July of that year you will find a full account of its habits, history, &c., together with a cut of the fly and the caterpillars. The fly emerges from her winter quarters in April or May, according to the season, and deposits her eggs on the leaves. These hatch in about a week and the caterpillars soon commence their work of destruction.

GOOSEBERRY SAW-FLY.

If you do not destroy the first brood, the caterpillars, when full grown, descend to the earth, undergo their transformations and emerge again as perfect flies to renew the work of distruction. In this way you may have two or three broods in a season, and if people let them alone they will spread with fearful rapidity. Go home and declare war with the rascals. Hoist the black flag. Give no quarters—and you shall have currants still in spite of the saw-fly.

"The mildew on the gooseberry is a sorer of trouble. It is difficult to raise the large English kinds. Mulching the bushes and scattering sulphur on the leaves and fruit as soon as the first appearance of mildew is seen, are the only preventives I know."

'Yes. I think sulphur will check it if *applied in time*. The mildew on the gooseberry is closely allied to the grape mildew, and we know that sulphur dusted on the

leaves and fruit is a certain cure for grape mildew when done early enough. So it is for mildew on hops, and I believe it will be found efficient on the gooseberry."

"Here is the 'tree tomato' so much talked about. This plant has been in the green-house all winter, and is almost as stiff as a dwarf apple tree. It is quite handsome, and the French papers speak of its productiveness, hardiness, and other good qualities in high terms."

"No doubt about that. If you have time, tomatoes can be trained on trellises or on a board fence so as to present a very beautiful appearance, and also to produce a large quantity of fruit of superior quality. The plan you allude to was described in the *Genesee Farmer* for June 1857. Drive stakes into the ground when the plants are set out—and as they grow nail some strips of wood across so as to form an espalier to train the plants upon, a foot apart. Long thin poles tied to the stakes will answer just as well. Train the main stem right up the post and when it has set the first branch of fruit pinch out the leading shoot to one leaf above the bunch of fruit. It will immediately push another leader, and also throw out laterals from the bottom. Train these laterals along the trellise on each side of the main stem, and when they have set the first bunch of fruit pinch out the leader to one leaf, the same as in the main stem. They will soon push again and set another bunch of fruit, which must be treated in the same way. Mr. SALTER, who has raised them in this way for many years, thinks the fruit is everyway superior, and certainly they look much better than when allowed to trail on the ground."

"The poet SHELLEY sighed for a 'small house and a large garden.' Very poetical doubtless, but a little experience would have convinced him of his eror. A small garden is a great deal better when it is cultivated as a recreation. I should want it a little bigger than a Chinaman's garden on the top of a house, or on the deck of a canal boat, but not so large that I could not do most of the labor, except digging, with my own hands. Such a garden, for all persons engaged in sedentary pursuits in our cities and villages, who have any taste for horticulture, would prove the source of much pleasure and afford healthful occupation for many a leisure hour. The best gardens in this country—those most thoroughly cultivated—generally belong to such persons. With few exceptions, farmer's gardens do not deserve the name."

"Look at this Wistaria. These vines have been here for several years, but never looked so well before. They are entirely covered with flowers, and nothing can be more beautiful. I suppose the reason is that the fine weather last summer and autumn ripened up the wood perfectly."

"Immature wood is the source of most of the failures and diseases in fruit and ornamental trees. I am accused of having a sort of *immature wood mania*. Few people can bring themselves to think that the pear blight, curl of the leaf in peaches, black knot in the plum, and a thousand and one diseases that affect fruit and ornamental trees are all attributable to immature wood. But in my opinion this is one of the principle causes. In every department of Natural Science we see a vast number of

THE TREE TOMATO.

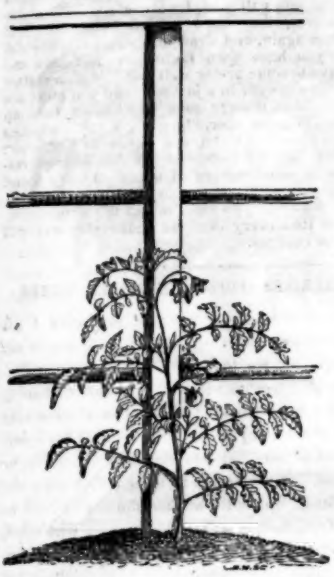
effects produced by one cause. In fact this causes the admirable simplicity which the student everywhere perceiving in the laws of nature. Look at the law of gravitation. What an infinite number of different effects, extending through all space, are produced from one cause."

"And so it is no objection to the theory that a great number of apparently diverse effects in horticulture are produced by the simple cause of immature wood. But I must not mount my hobby at this time."

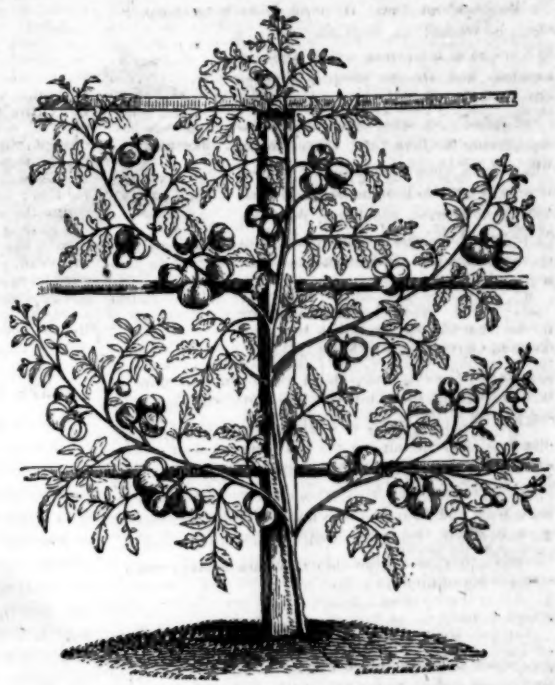
"According to Dr. FITCH we are not likely to be so much troubled with aphides this summer as last. But there are a few already on this pear tree. Soap suds, or tobacco water, if thoroughly applied, is said to be good."

"The Curculio *can* be kept under. ELLWANGER & BARRY raise magnificent plums every year in their grounds. Jarring the trees is the only known remedy. Merely shaking the trees will not bring down the 'little Turk.'

It requires a sharp jar on the trunk, or on the end of a limb sawed off. It should be done early in the morning, before the curculio is fairly waked up. He falls more readily when cold. Lay sheets under the tree and pour the chaps into hot water. This process gets rid of the insects, but it is also advisable to collect all the stung and fallen fruit and destroy it, or let the pigs and poultry do the work for you. 'Jarring' and the 'pig and poultry' remedy, if faithfully carried out, would soon lessen the number of curculios, and we should again be able to raise plums and apricots."



TOMATO PLANT WHEN SET OUT.



TOMATO VINE TRAINED AND IN BEARING.

"Strawberries promise well. I have just given them a little superphosphate and sulphate of ammonia, and to-morrow I intend to mulch them with the clippings of the lawn. Tan bark is better if it could be had."

"Things are suffering for want of rain. The fly is eating up these cabbage and cauliflower plants. If we had a good shower they would grow so fast that the flies could do little damage. *Vigorous growth* is a grand remedy against most of the ills that plants are heir to."

"Oh yes; you can water, but it takes time, and watering as ordinarly done, is useless. If you water at all, it should be done thoroughly. The ground must be soaked to the depth of the roots, merely sprinkling the surface is worse than nothing."

"It is astonishing what ideas people have about watering. I saw a couple of men, the other day, watering some celery plants in a cold frame that had been pricked out and were thin on the ground. On another part of the frame there were some cabbage plants that were very thick and full of weeds. The gardener remarked to the person who was watering: 'You need not water them; *they are very thick!*' His idea evidently was that the plants and weeds *shaded the ground!*"

"The truth is that the weeds alone evaporated the water nearly as fast as he carried it, and had he pulled out the weeds and thinned the plants, less rather than more water would have been required."

"Plants suck up water out of the soil and evaporate it through their leaves into the atmosphere with a rapidity that few people have any idea of. When I was at Rothamsted we made some experiments to determine how much water plants evaporated during their growth. The results showed that an acre of wheat would evaporate on an average 4111 lbs of water per day, while an acre of clover, which covers the ground more closely, evaporated 8600 lbs per day."

"You doubt it? Well, I cannot help that. I have no doubt that in our dry climate the evaporation is even still greater. You must recollect that a good days rain, say one inch, brings 120 tons of water per acre. We have, in this section, about thirty inches fall of rain in a year, and this is equal to an average of 19,700 lbs of water *per day* on each acre."

"Put up that two quart watering pot. It rains; it rains! Hail, blessed rain; offspring of Heaven! Welcome to earth! thrice welcome to this hot and dusty garden!! Now for transplanting cabbage, and cauliflowers, and celery! Take them up with a 'ball" and they will not know they have been moved."

THE FRUIT TREE BORER.

We recently called on a friend who is famous for the success of his apple crop. He is no believer in the generally received opinions about "changes of climate" since the days of our forefathers, "wearing out of the soil," "degeneracy of varieties," and the theories that are satisfactory to most people for their ill success; and we asked him for his "recipe" that we might add it to the number already on file.

"My plan," said he, "is simply to keep away the borer." "The borer," he continued, "weakens the trees, and once weakened, the fruit drops before it is mature, or it can not recover from the slightest injury that any insect inflicts on it; moreover, the tree becomes sickly, and and then insects prey on it; for they do not like healthy trees. Insects have an office in nature to perform, which is to hasten to decay what nature has intended to remove from living families—just as worms soon take away the life of a sickly pig."

"Easy enough talking," observed a friend with us, "but how do you keep away the borer? Tobaco stems?" "No." "Lime?" "No." "Ashes?" "No, none of these." "Pray, what then?" "Now you give it up, I will tell you. I merely keep the soil scraped away from the trunk down to the bare roots all the year round—summer and winter."

My companion laughed incredulously if not contemptuously; "and,' said he, "friend C. I have given you credit for better understanding than to suppose any amount of freezing or roasting will kill a borer once domiciled within the trunk of the tree." "I do not suppose it will," he replied, "I have no such object. If I can ever find one in, I trust to my jack-knife or wire for his destruction, and not to heat or frost." This was a poser.

"What then is your object?" was the next inquiry. "It is to keep the borer out. Did you ever see the borer enter the stem of the tree, at any height above the ground? No. And why? It requires soft moist bark for the purpose; and whenever you remove the soil, and render the bark hard and firm to the collar, the borer instinctively goes to other and more favorable places for the secure raising of its young."

"But will they not go into the main leading roots?" "I have found them to avoid these roots as if it were unfit to rear their young; in fact, I have never known them attack mine."

Nor had they; that was evident. A clean, healthful orchard—never cropped, annually top-dressed, grass kept away several feet from the stem, so that no insect could find a cool and moist harbor for its larvæ, and every success following. Certainly the borers did not attack these trees; and the novel reasoning struck us as so philosophical, that we have thought it worth recording in our pages, for further observation and—for we want to be repaid for the suggestion—report in these pages.—*Gardener's Monthly.*

WHALE OIL SOAP FOR THE ROSE SLUG.

Some years ago, the Massachusetts Horticultural Society offered a prize for a remedy for the slug which feeds on the leaves of the rose. The prize was awarded to David Haggerston. The remedy consisted of syringing the bushes with a solution of 2 lbs. of whale oil soap in 15 gallons of water. This remedy has been extensively used, and is undoubtedly effectual. A correspondent of the last *Gardener's Monthly* says he has used it for eight or nine years, and it has not only preserved his rose bushes from the ravages of the slug, but has greatly lessened their numbers from year to year, so that now the labor of protecting the bushes from this insect is materially lessened, though his bushes are much larger. He says:

As late as may be in the season, before the opening of the blooms, put into a bucket, say about 4 lbs. whale oil soap (of late years I have not been particular to weigh or measure, being governed by the color, taste and smell). Upon this pour a kettle of boiling water. With a stick, with a square end, stir and "mash" the soap till it is all dissolved. Let it stand for a few hours, and strain through a piece of coarse sacking into a tub, which fill with water. As you use it, dilute still more, to as many as eight pails of water. Apply it at night, in fair weather to the plants by means of a good garden syringe, with a *fine* rose. And here let me say, the work must be thorough. Commit it to no hired help; if you do it may be slighted. But grasp the syringe yourself, and make a furious attack on the plants. Charge upon them at every point; go round and round, and round again each bush, and drive, with all the force you can command, the fluid into every part, and under every leaf. Get down upon the ground and force it up, wetting the underside of the leaves, where the insects at this time of the day most abound. After feeling sure you have thoroughly drenched the entire plans, you will find, by turning up the under side of the leaves, they have not all been wet. But charge into them again, and draw them through the wet hand; for, if you have been faithful, your hands and clothes will have become pretty well wet. But no matter for that; you are engaged in a just war, and you must not count the cost. And if your good wife should turn up her nose at the offensive odor which for a while attaches to you, she will excuse it when she comes to look upon the clean, glossy, healthy foliage of her rose bushes, rescued from ruin by so efficacious an agent. I have found one application sufficient. But should they show themselves again "in force," you must repeat the application. But be assured that every one you thoroughly wet will commit no more ravages.

GRAPE TRELLISES—TIGHTENING THE WIRES.

Eds. Genesee Farmer:—I was thinking, after I got home from my late visit to your office, that it might not have been amiss for me to have mentioned, when conversing briefly about grape vines, the method I mean to try to stretch the wires for my trellis. I have never seen or heard of it, but it may be stale to you. I have purchased some "saw rods," at five shillings per dozen, or five cents apiece. The wire can be attached to each end and then tightened up, and it strikes me that it will be considerably stronger than a thread cut on the wire itself, and is, besides, more convenient for tightening or loosening as the weather may demand. I have nothing but theory to show in the matter now, but hope before long to test it fully, and will communicate the result.

Lyons, N. Y. RURICOLIST.

Strawberry Wine.—Charles D. Bragdon, of the *Rural New Yorker*, states that E. Sims, of Broome county, Indiana, informs him that he has had great success in making wine from strawberries. He states that he "realized full *six hundred dollars net profits from not over half an acre* of land in strawberries." He states that he has sold the wine readily at $2.50 per gallon. He has forty acres in strawberries in Illinois—eighteen of which are in the southern part of the State, for an early market—and intends to make from seventy-five to a hundred barrels of wine the coming season.

Peach Borers.—A correspondent of the *Gardener's Monthly* says a friend of his applied spirits of turpentine to his peach trees affected by the borer. The remedy was "radical and thorough, the *trees* in two hours being so dead that no borer could injure them." The same writer has tried with success a strong solution of tobacco water, applied on a dry day in June, and the tobacco leaves left around the collar of the tree. In the autumn following only one worm was found in a dozen trees.

IRRIGATION FOR PEAR TREES, STRAWBERRIES, &C.

In the agricultural department of the *Genesee Farmer* this month, we have spoken of the great advantages to be derived from irrigating grass lands. The subject of irrigation is one of such vast importance in our dry, hot climate, that we need not apologize for again calling attention to the results which have attended its use in this country.

We find in the Boston *Cultivator* a communication from ARTEMAS NEWELL, Esq., of Needham, Mass., embodied in the Report of the Norfolk County Agricultural Society, for 1861, giving the results of irrigation on grass lands, fruit trees, &c., under circumstances where to the casual observer a supply of water would be difficult to obtain. Mr. N. says:

"That part of my land which I judged might be improved as to its general productiveness, by both drainage and irrigation, lies between the public road on the south and a pond on its northern boundary. A portion of the land, perhaps eight or ten acres, is a dry, gravelly loam, surrounded on every side by low meadow or peat bog, the water formerly standing or running some four or five feet below the level of the highest part of the land to be irrigated; consequently it *seemed* impracticable to use the water for that purpose. The center or highest part of the land was cultivated and three or four acres planted with pear trees, between the rows of which were planted strawberries and currants, and in some instances potatoes, carrots, and other roots. The other portion of the high land was devoted to grass or grain. The pear trees were planted in rows nine feet apart each way, giving 81 square feet to each tree, and 537 trees to an acre. Between the rows of trees, beds were prepared for strawberries by back furrowing *very deep* to the center, leaving beds just three feet wide, with a hollow between each bed and row of trees for the water to run in when needed. In the center, between the trees in the rows, a currant bush is planted, thus giving as many of these as there are of the trees.

"In commencing the work, I first ascertained by levels whether I could drain the upper end of the lot, which is a deep peat bog—the surface of the mud and water there being apparently much below the surface of the dry land. It was found practicable to drain it considerably by digging through the high part of the land for a distance of 600 or 800 feet towards the pond on the north, but impossible to carry the water to those higher portions where irrigation was most required. To obviate that difficulty I caused the bog or basin at the head to be made deeper and larger, by removing large quantities of muck, which was used for compost, and this excavation opened numerous additional springs. Then the water was secured by damming up all the old drains leading from the pond so formed, by which means the water rose to a sufficient height to carry it quite above the highest and driest part of the field.

"I describe these preliminary proceedings with some particularity as to the details, because they embrace the most important part of the process. Without those examinations, I should hardly have known from which end of my field the water would run, although the fall was abundant when it was made available. Judging from my own somewhat limited experience and observation in these matters, I think that even a superficial examination, by the aid only of a common level, will show that there are many farms in our country where irrigation can be successfully practised, with trifling expense compared with the benefit, though the owners now look on the object as impracticable for such localities. There are few farms that have not some facilities for irrigation, if they are sought for and made available. In some cases the sources whence water may be obtained are not on the land most requiring it, but by a small amount of labor a head may be raised where a supply is found in swamps or ponds, and by channels it may be conveyed to the places where it is wanted. It is not unusual to see water carried for miles along the sides of mountains and hills for the purpose of irrigation, in countries where the benefits of the process are duly appreciated. Here, we often see a brisk stream of pure water running through a dry pasture in a crooked channel. In many cases, if proper attention were given, it could, without much expense, be dammed, and carried along the head of the descent and spread over the whole or a greater portion of the pasture during several of the spring and fall months, and, perhaps, by opening the springs, a supply might be obtained that would continue through the summer.

"My plan for distributing the water, is to convey it from the reservoir to the upper end of the pear-tree lot, where it falls into an artificial channel or ditch, which extends across the lot at the ends of all the rows of trees, strawberries, &c. To that side of the ditch next the ends of the rows, is fitted a two-inch plank ten or twelve inches wide, set edgewise, and through the plank, at intervals of four feet and a half, corresponding with the distance of the rows from each other, a round drain-pipe of an inch bore is inserted, with a cork to each, by which the whole or any portion of them may be closed when desired. Each row of trees, strawberries, &c., is thus supplied with an equal quantity of water. When the water has run down the whole length of the rows, it falls into a similar ditch as that at the upper end, and is from thence distributed over the grass field below, or let into a reservoir in which is put strong manure for the purpose of making *liquid manure*, which is distributed in rivulets over the mowing land—a method of *spreading* manure which is found to be of great advantage and requiring little labor.

"That part of the water which is not taken into the head pipes as it passes, (and this is much the largest part,) falls into a channel which conducts it to another pear-tree lot, arranged with strawberry beds, where a part of it is turned through channels between the rows, as before described, and a part runs into an artificial fish pond, the outflow of which is conducted to a small workshop in the garden, and by means of an over-shot wheel, six feet in diameter, turns grindstones, works a turning lathe, circular saw, hay-cutting machine, corn-sheller, pump, &c., &c.

"In regard to some of the effects of irrigation, I consider the hay crop more than doubled by water alone, without the application of liquid or other manure.

"The pear trees, which are mostly on quince stocks, were imported from France, part of them planted in the

spring of 1857, and the other part, from the same nursery, in the spring of 1859. They were two years from the bud. The principal fertilizer they have received is the water applied by irrigation, as before described. On some parts of the grounds the irrigation has been more thorough than on others. Under such circumstances the trees have made more than twice the growth of wood. The difference between those which have been *well* watered and those which have not, can be seen almost as far as the trees can be seen—the size and luxuriance being so much in favor of the former. The best trees are where there is irrigation on the surface and drain pipes laid directly under them, four feet below.

"Strawberries I plant between the rows of pear trees, in deep, light beds, three feet wide only. By this arrangement the soil is never trodden down, either in planting, weeding, trimming, or picking the fruit, and they are much more easily kept free from weeds. The beds are liberally supplied with strong manure, placed in one deep furrow in the center of the bed, at least one foot below the surface. One row of plants is set directly over the manure, the plants fifteen to eighteen inches apart. They are set in the month of May. The hole for the plant is made with a tool like a marlin-spike, reaching down well into the manure. The roots are let down and the hole is carefully filled with fine earth without pressing, then soaked with water, and dry earth placed over the top to prevent baking. The effect of placing the manure so deep, is to carry the roots of the plant through the manure to the soil in a dry time, to entirely cover the beds by autumn with the most vigorous plants, and to keep the seeds of weeds and grass so low that they will do no harm. The fruit is mostly grown on the new plants, which have derived their vigor from the manure chiefly through the roots of the original plant, the runners of which are cut off in the spring for the purpose of weeding, &c.

"Most of my strawberry beds are watered liberally by a constant flow of water along the channels, which have been described. The results are, that the berries are large and fair; they do not ripen quite as early, but continue in bearing much longer; the crop is certain, even in the dryest seasons, when those on dry lands are cut off—sometimes before half the crop is matured. In fact, I deem irrigation almost indispensable for the successful cultivation of strawberries in dry seasons."

Ornamental Tubs for Trees.—The Royal Horticultural Society has offered a prize of fifty dollars for the best ornamental tub for trees in pots. It seems that in England they are as destitute as we are here of anything at all elegant for such purposes, as the *Gardener's Chronicle* says that the trees in the conservatory of Capt. Fowke, in the Garden of the Society itself, stand in pieces of hogsheads and clumsy rectangular cases of wood. There is quite a demand here for ornamental pots, but there is no supply. It would seem to be an excellent field for the young artists in our Schools of Design to put into exercise the teachings which they have received.

Gas is now being used in England to heat small conservatories, and it is said very successfully, and that it is not more expensive than coal, when properly managed.

THE CURL OF THE PEACH LEAF.

Every spring after the peach leaf is about two-thirds grown, it is attacked in some strange manner, and caused to blister, curl, and eventually drop off. The cause is a subject of various opinions; some attribute it to an insect, others to cold winds, others to other causes too numerous to mention. To remedy this curl is an item of interest to every one. One remedy recommended is, to sprinkle the trees, just before the opening of the flower buds, with a mixture compounded of equal parts of lime, flour of sulphur and soot, dissolved in water.

We have no faith in this or any other external remedy. The cause of the curl of the leaf is undoubtedly owing to a lack of vigor in the tree. This weakness in the tree may be the result of a severe winter, or of immature wood, or of overbearing the preceding year, or of exhaustion of the soil, or of sowing crops in the orchard. One great cause, we think, is the coldness of the soil in the spring as compared with the temperature of the atmosphere. The warm atmosphere starts the sap, and the soil is so cold that the formation of new roots is prevented, and the sap which should go to form roots is thrown into the circulation of the tree and becomes diseased. Underdraining and planting on the north side of a hill, are remedies which suggest themselves, as likely to correct this difficulty to some extent.

ALOES FOR SLUGS ON CABBAGE, &c.

Eds. Genesee Farmer:—In the last number of the *Farmer*, L. De Volk inquires what to do with slugs on cabbage, &c. I answer, dissolve two ounces of aloes in a gallon of hot water, and give his plants a good sprinkling with the solution (when cool) occasionally. I have used it two years, and find it to be a complete protection to cabbage and tomato plants against insects, as also a protection to squash, cucumber, &c., vines, against the striped bug, rose bushes, &c., against slugs, and what will please many house-wives, it is an "extinguisher" to that pest, the bed-bug. Boil your bed-cords in it, and wet the joints of your bedstead with it a few times, and you will certainly be rid of bed-bugs. The best way to apply it to plants is with a garden syringe. If friend De Volk is troubled with cut worms in his cabbage yard, cut paper into pieces about two inches square, and wrap a piece around the stalk of each plant before setting, so that the paper will reach a little below the surface of the ground when set out, and the worms will not cut off one in a thousand plants.

Wm. Howe.

Planting the Large Tree of California for Timber in England.—The Welligtonia gigantia seems to be very hardy in England. A correspondent of the *Cottage Gardener*, speaking of one he had seen at Worsley Hall, near Manchester, planted by the Queen two or three years ago, as a commemoration of a visit she then made to the Earl of Ellesmere, prophecies that this "magnificent denizen of California" will be planted largely by the next generation for timber purposes, and with every prospect of success, as it has grown well, and stood the frost of December, 1860, without being at all injured.

Stop the Melon and Cucumber Vines.—As the vines run, pinch off the heads. It will strengthen the vines and throw the sap into the fruit.

A FEW OF OUR BEST ORCHIDS.

Under this head the London *Journal of Horticulture* classes the Showy Dendrobe, (*Dendrobium speciosum,*) a native of New South Wales. We annex a beautiful cut of a fine plant five feet in diameter, with nineteen spikes of bloom, each spike two feet long, and each comprising about one hundred pale yellow, sweet-scented flowers. It is best cultivated in a greenhouse throughout the year, with temperature suited to Pelargoniums. An English cultivator succeeded admirably by the following treatment:

A FINE ORCHID — SHOWY DENDROBE.

"The plant was grown in an intermediate-house varying from 65° to 75° in summer, but at other seasons from 45° to 55°. In May, its season of rest, it was placed in a cold pit, exposed to the sun, and very little water given. In September, the commencement of its growth season, it was returned to the intermediate-house and freely watered.

"It blooms during February and March. If grown in a stove it is luxuriant, but does not produce flowers."

Trimming Old Apple Orchards.—G. R. Lawson, Canada West, inquires about his old orchard, as to trimming, &c. If he wishes to renew the tops, give it a pretty severe trimming in February, or before the sap begins to circulate. New limbs start out profusely when the growing season comes on. If the tops do not need renewing, but only thinning, trim in June or July; new shoots will then start very sparingly, which rub off as soon as they start. Give your trees a good mulching with chip manure, or rotten wood and leaves from the forest; such manure is much better for fruit trees than barn-yard manure.—Wm. Howe.

An American Peach in England.—The last number of the London *Florist and Pomologist* contains a finely colored plate of the Early York peach. It was introduced into England a few years ago from this country, and appears to be adapted to the climate, and "infinitely superior in every respect" to the Early Anne; which had previously been the best early peach raised in England.

Tomatoes.—A correspondent of the *Gardener's Monthly* says: "When the young plants are ready to transfer from the hot-bed to the open ground, remove all the *buds* at the axil of each leaf, except the two upper ones; this can be easily and rapidly done with a sharp pointed splinter of hard wood, without injury to the plant. Transplant carefully with a ball of earth into rich soil, and as soon as well established pinch off all the lower *leaves*. Thus only two branches are formed, which grow with great vigor, and set a large amount of fruit, which is of much larger size than that grown by the usual mode. Many of mine, of the Large Smooth Red variety, weighed over two lbs."

Celery.—The *Cottage Gardener* says:—"Do not by any means dig the trench for celery too deep; for to dig a ditch as deep as the cultivated soil, and then dig in some raw dung into an obstinate unfertile subsoil, and plant immediately, is very bad practice, and is the cause of so much celery running so many weeks in summer without making any progress. Subsoil requires fertilization, and until that is done the roots will not occupy it. Celery is one of the gross feeders, drinking in large quantities of liquid manure, like a toper. It, however, benefits much by it, and may be treated thereto with advantage during the growing season."

Shall we have to give up Verbenas?—A correspondent of the *Country Gentleman* says the verbena last year was attacked by blue lice on the roots. In other places the blight has prevailed for several years, and seems to be increasing. He thinks that we "shall soon be obliged to give up the verbena as a bedding plant." We hope not, for there is no plant equal to it for this purpose. Last year, in this section, verbenas never were healthier or finer.

Improved Black Cap Raspberry.—A correspondent of the *Wisconsin Farmer* says that from one acre of these plants, a year from planting, he raised last season *twenty-five bushels* of berries.

Ladies' Department.

ORIGINAL DOMESTIC RECEIPTS.

Contributed to the Genesee Farmer.

Soyer's Pudding.—Take slices of bread and spread them with butter, and lay them in a pudding dish with layers of any kind of fruit or preserves, and then cover with a nice custard, and eat with a sauce.

Baked Eggs.—Put half an ounce of butter into a small tin pan; break four eggs in it, keeping the yolks whole. Throw a little pepper and bits of butter and salt over. Put into the oven till set, and serve. They will take about six minutes doing.

Rhubarb or Pie Plant Pie.—Every one does not know what a very great improvement a little molasses is to a pie-plant pie, but any one who will make the experiment will be pleased with the result. Currants or gooseberries mixed with the pie-plant add to the flavor very much.

Green Peas and Pork.—Put a piece of salt pork of about two lbs. into a pan with a quart of peas. Fill up with water, add two teaspoonfuls of salt, one of pepper, one of sugar and two onions. Bake for three hours. A little mint might be added. Three pints of large peas alone, with a little dripping, is as good as above.—Soyer.

Gooseberry Fool.—Put in a pan a quart of green gooseberries, with a wineglass of water and half lb. of sugar. Stew on a slow fire for twenty minutes; keep stirring. Put in a basin and whip a pint of cream. When the fruit is cold, mix with the cream and serve in cups or a hollow dish with pastry round it. Rhubarb and any of the small fruits may be done in the same way.

Salad Sauce (French).—Boil one egg hard. When cold, remove the yolk, put it into a basin and bruise it to pulp with a wooden spoon. Then add a raw yolk and a teaspoonful of flour, a small teaspoonful of salt, a quarter of pepper; then add half a spoonful of vinegar, stir it round, pour over a tablespoonful of oil by degrees, then a little more vinegar, and two more of oil, until eight teaspoonsful of oil and three of vinegar are used. Season with half a teaspoonful of chopped onions, two of parsley and a pinch of cayenne. It will keep sometime if properly cooked.

Strawberry Short Cake.—This is an exceedingly delicious dish, although a little like painting the lily, for the strawberry is too luscious in itself to require any of the aids of cookery. We give it, not for the benefit of our dyspeptic readers,—for we warn them against it—but for those who can eat hot cakes for tea, and can not dispense with strawberries while they are in season. The cake should be made like soda biscuit, rather richer, but very light, and baked in a round tin about the size of a dinner plate. Immediately upon taking it out of the oven split it in three parts, and spread them with butter very thinly. Have your strawberries prepared by covering them with sugar. Spread a thick layer of these upon one of the slices of the cake, and pour over them the richest cream that you can procure; then add another layer of the shortcake and another of strawberries, as before. Cover the whole with the remaining slice of the cake, add some cream and powdered sugar, and you have a dish which would tickle the palate of an epicure.

Timothy Titcomb on Women.—Women, in my apprehension, is the mistress, not alone of the melody of music, but of the melody of life. Whatever it may be possible to do by cultivation and a long course of development, it is doubtful whether a woman would ever sing bass well. I am aware that she has the right, and the organs, but I question whether her bass would amount to anything—whether it would be worth singing. When women talk with me about their right to vote, and their right to practice law, and their right to engage in any business which usage has assigned to man, I say "yes—you have all those rights." I never dispute with them at all. Indeed, you see how I have put myself forward as the defender of these same rights; yet I should be sorry to see them exercised by the women I admire and love. It is all very well to say that the presence of woman at the ballot-box would purify it; but I have seen enough of the world to learn that all human influence is reciprocal and reactionary. Man and the ballot-box might gain, but woman would lose, and men and the ballot-box themselves would lose in the long run. The ballot-box is the bass, and it should be man's business to sing it, while woman should give him home melody with which it should harmonize.

Baby's Shoe Sock.—Use four needles. Cast 22 stitches on each needle of white split zephyr or the finest Saxony two-threaded yarn. Knit 7 shells deep; put in the color, cast on 12 stitches and rib back across 4 shells, making one row of holes through the centre for strings. Bind off 12 stitches on each end to complete the straps. Knit instep 7 shells in white; 7 double ribs for heel in color. Narrow off and take up on side 120 stitches; knit 7 double ribs to toe; continue to knit in the color all around 7 double ribs, narrowing like a stocking and bind off.

Shells.—Seam three stitches; widen 8 at once to 11. Each time after the seaming, narrow the 2 first of the 11 and slip and bind the last 2, until the number is reduced to the original 8. Repeat this seaming 3 between.

Good Cooking not Inconsistent with Piety.—I've nothin' to say agin' her piety, my dear, but I know very well I shouldn't like her to cook my victuals. When a man comes in hungry an' tired, piety wont feed him, I reckon. I called in one day when she was dishin' up Mr. Truman's dinner, an' I could see that the potatoes were as watery as water. It's right enough to be spiritual—I'm no enemy to that; but I like my potatoes mealy. I don't see as anybody 'ull go to heaven sooner for not digestin' their dinner—providin' they don't die the sooner, as mayhap Mr. Truman will, poor dear man!—*Adam Bede.*

The Paris women are excited about an electric head dress invented for the Empress Eugenie. It is a crown formed of globules of glass lighted by electric light, and set with diamonds, rubies and emeralds. It emits such an effulgence as to light up of itself a dark room, and if ever put into general use will supersede the necessity of gas jets or wax candles. Every lady will be her own chandelier.

Miscellaneous.

OUR SENTIMENTS.

This longing after beauty,
This sighing after curls—
This chasing after Fashion,
Wherever fashion whirls—
[And all that sort of thing.]

May do for those who like them—
For those devoid of taste—
For those who barter diamonds off
For diamonds made of paste,
[And all other blockheads.]

But to a Wife who truly loves—
Who'd be what she appears—
Who'd spread a sunshine round the man
Who keeps away her tears,
[And brings the "taiers" home.]

We'd whisper softly in her ear—
We'd grave it on her heart—
That knowing *how to fry a steak*
Beats Sentiment and Art
[Con-sid-er-a-ble.]

A Woman's Courage and Devotion.—During the whole of Lord Dundonald's arduous services and romantic adventures in South America, Lady Dundonald accompanied him, to soothe his anxieties, to sustain his hopes, to animate his exertions, to share his dangers. One night, while he was in command of the Chilian fleet, his ship got becalmed under a battery, from which he was assailed with red hot shot. His men were seized with a panic and deserted their guns. If the fire from the shore was not returned, it would speedily become steady, sustained and fatal. He went down in the cabin where she lay. "If a woman sets them the example, they will be ashamed of their fear; it is our only chance." She arose and followed him upon deck. The first object that met her eye was the battery, with its flaming furnaces—round it dark figures were moving, looking more like incarnate fiends than men. A glance at her husband's features, and his "terrible" calmness reassured her. She took a match and fired a gun when he had pointed it. The effect on the crew was electrical; they returned to their posts with a shout, and the battery was speedily silenced.

An Awful Comparison.—Sir William Brown, a pompous sort of a man, being at a parish meeting, made some proposals which were objected to by a farmer. "Sir, do you know that I have been to two universities?" "Well, sir," said the farmer, "what of that? I had a calf that sucked two cows, and the observation I made was, the more he sucked the greater calf he grew." Sir William never heard the last of that.

A celebrated physician one day advised Voltaire to give up coffee, having just found out, he said, that it was a slow poison. "It must be very slow indeed," replied the French poet, "for I have been using it over sixty years, and am still alive."

Life is made up, not of great sacrifices or duties, but of little things, in which smiles and kindness, and small obligations given habitually are what win and preserve the heart, and secure comfort.

Let not the stream of your life be a murmuring stream.

Sometime since a lady of rather inquisitive character was visiting our country seat. Among other places, she visited the jail. She would ask the different prisoners for what crime they were put in there. It went of well enough till she came to a rather hard looking specimen of humanity, whom she asked, "What are you here for?" "For stealing a horse." "Are you not sorry for it?" "Yes." "Won't you try and do better another time?" "Yes; I'll steal two."

Muggins was passing up-street one day, with a friend, when he observed a poor dog, that had been killed, lying in the gutter. Muggins paused, gazed intently at the defunct animal, and at last said: "Here is another shipwreck." "Shipwreck! where?" "There's a bark that's lost forever." His companion growled, and passed on.

Mr. Peabody, the American banker of London, has resolved on erecting a number of houses for the working classes, who, through innumerable improvements in the metropolis, have been rendered almost homeless. For this purpose he is to give $500,000, and also undertakes to pay the first year's interest of the money—$25,000.

Small wits are great talkers, as empty barrels and shallow streams make the moist noise. It has been said that the smaller the calibre of the mind, the greater the *bore* of a perpetually open mouth. "I talk a good deal, but I talk well," said one of these men to Cardinal Richelieu. "Half of that is true," said the Cardinal.

Puzzle.—Edward told Willie that he would sit on *three* separate seats in the parlor, where they were both by themselves; every seat he sat down in he would get up out of it, and give Willie an opportunity to sit in each vacant seat, but that Willie would not be able to sit *but* in *two* out of the *three*. How did he do it?

How Kind!—The following notice was posted, in 1860, on the estate of a noble Marquis in Kent: "Notice is hereby given that the Marquis of Camden (on account of the backwardness of the season) will not shoot himself nor any of his tenants till after the sixteenth of September."

While we are coldly discussing a man's career, sneering at his mistakes, blaming his rashness, libelling his opinions—that man, in solitude, is perhaps shedding hot tears, because strength and patience are failing him to speak the difficult word and do the difficult deed.

Improvement in Churns.—The ordinary mode of churning butter in Chili is to put the milk in a skin—usually a dog's skin—tie it on a donkey; mount a boy on him with rowels to his spurs about the length of the animal's ears, and then run him four mile heats.

Punch says you know a gentleman by his gait—a blackguard by his Billingsgate. Why shouldn't a man be known by his gate?—the country people always say that a good farmer may be known by his *fences*, just as a villain is by his *off-fences*.

Why is a miser like seasoned timber? Because he never gives.

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The Genesee Farmer for Six Months.

The next number of the *Genesee Farmer* commences a half-volume. Now is a good time to subscribe. The half-volume, or six months, from July to December, inclusive, will be sent to any address for 25 cents.

On the last page will be found a list of Premiums which we offer to those who procure subscribers to the half-volume. Will our friends make an effort to induce their neighbors to try the *Farmer* for half a year? We are using our best efforts to make the *Genesee Farmer* worthy of the liberal patronage it enjoys. We have repeated assurances that no intelligent farmer can read a single number without getting some hint worth the cost of the entire volume. There are now thousands of farmers who are taking no strictly agricultural journal, and if our friends would present the claims of the *Genesee Farmer* to their neighbors, a large number would subscribe for it. It is so cheap that no one can object to take it on the score of cost.

The Premiums we offer are all good, and are well worth the effort it will cost to secure them. If, however, any of our friends do not wish to take advantage of these Premiums, we will let them have five copies of the half volume for $1.00, or 16 copies for $3.00, together with a copy of the *Rural Annual and Horticultural Directory* for 1862, to the getter up of the club.

We can still supply the back numbers of this year, and those who prefer it can have the whole volume at the same rates.

Notes on the Weather, from April 15th to May 15th, 1862.—While the mean heat of the first half of April was one and a half degrees below the average for twenty-five years, that of the last half was one-third degree above the average; so that the mean of the month was one degree below that for twenty-five years. The temperature for the last half was 47.3°, and for the month 43.4°. The highest heat was 77°, on the 16th, and the lowest 32°, on the 24th. We had a hard frost on the 24th and 25th, but the buds of fruit trees were too close covered to be injured.

The rain was 1.89 inch in the month; a small quantity. Still, the earth is well watered. At Washington, D. C., the rain amounted to six inches.

The weather has been quite pleasant, and the early flowers, such as Trailing Arbutus, Spring Beauty, Silverleaf, Dutchman's Breeches, Blood-root, &c., appeared about the usual time, as they are all wood's plants.

May opened with the same regular weather with which the month had just closed. The average temperature was 52.6° for the first half, which is nearly a degree below the mean for twenty-five years. The hottest noon was 77°, on the 12th; the coldest morning was 42°, at 7 A. M. the 8th, and at sunrise of the 14th was 41°, and much white frost on roofs and plank-walks, and very little on plants. The flowers seemed not to be injured. In blossom, apricot on the 6th, common cherry on the 14th, peaches on the 14th, pears just showing flowers on the 15th.

Very little rain in this half month; the weather fair, and the season fine for farmers, who have driven their business. Much clear and fine weather, and many bright nights. Vegetation rapid on 9th and 10th, and on the last two days; as forward as last year.

The Provincial Fair of Upper Canada is to be held at Toronto, Sept. 23–27.

The list of Premiums for the New York State Fair can be had at this office.

Agricultural Items.

The New York State Fair will be held in this city Sept. 30th, and Oct. 1st, 2d and 3d. The indications are that it will be one of the best ever held in the State.

B. P. Johnson, Secretary of the New York State Agricultural Society, has gone to England on business connected with the American department of the Great Exhibition. He will be back in time to attend the State Fair.

The Homestead Bill has been signed by the President, and is now a law. Any citizen of the United States, or those who declare their intention of becoming such, by paying the charges for surveying, &c:, and who will reside on and cultivate it for five years, can have a farm of 160 acres of government land without charge.

At Mr. Thomas Richardson's sale of imported Alderney cows, in New York, prices ranged from $140 to $185 each. Some good Ayrshire cows, recently imported, sold from $80 to $140 each.

A pine spar, 230 feet long, has been sent to the Exhibition in London, from Vancouver's Island. It is to be erected in the grounds of the Royal Horticultural Society's Garden.

John Johnston, of Seneca Co., turned his cattle into a good bite of grass April 30th. This is *earlier* than he ever turned his cattle out before on his farm, during 40 years.

J. B. Lawes, Esq., offers a silver cup, worth $250, to the tenant farmer who shall grow the best ten acres of Swedes (Ruta bagas) in Ireland the present season.

Few crops have been planted in Virginia this season. So of other Southern States. We shall have to make up the deficiency by extra crops at the North and West.

F. K. Phœnix, of Bloomington, Ill., the "Rochester of the West," writes us, May 19th: "Weather favorable; a good show for fruits, if not killed by late frosts."

A trial of Reapers, Headers, Mowers and Grain Binders will be held at Dixon, Ill., the coming harvest, under the auspices of the Ill. State Ag. Society.

A great Wool Exhibition, open to all parts of the United States and Canada, is to be held at the next Ohio State Fair, in Cleveland.

A severe hail-storm occurred at McConnelsburgh, Pa., May 21, which did great damage to fields of grain and fruit trees

A law was passed by the late Legislature of this State to prevent cattle running at large in the public highways.

Another attempt is being made to introduce salmon from England into Australian waters.

There are complaints of the loss of lambs this spring, from a kind of throat disease.

The great International Exhibition, in London, was formally opened May 1.

Tobacco has been extensively planted in Missouri the present season.

The Ohio State Fair will be held at Cleveland Sept. 16-19.

Fruit-Growers' Society of Western New York.—The June Meeting of the Fruit-Growers' Society of Western New York will be held at the Court House in Rochester, N. Y., at 11 o'clock A. M., on Wednesday, the 25th day of June, 1862.

A fine show of fruits may be expected.

By order of the Council.

C. P. Bissell, Secretary, Rochester, N. Y.

The Markets.

OFFICE OF THE GENESEE FARMER,
Rochester, N. Y., May 29, 1862.

Grain of all kinds has again fallen from 3 to 5 cents per bushel. The better grades of white and red wheat are now considerably lower in New York than they were this time last year, while the poorer qualities are about the same price. Corn is about the same price as it was twelve months ago, while rye is from 10c. to 15c. per bushel higher, and barley from 9c. to 11c. higher than a year ago.

We have had reports of wet weather in England that injured the growing crops, but more recent advices report favorable weather and good prospects for an abundant harvest. In this country, as a general rule, the wheat crop looks very well. There is a large amount of grain of last harvest still in the country, and the prospects on the whole are not favorable to any great advance in prices between this and harvest.

Beans are scarce and in demand at full rates. Extra choice Marrows bring $2.80 per bushel, and $3 is asked. Mediums, $2.40@$2.50. Mixed, $2@$2.10 per bushel of 62 lbs.

Little is yet doing in Wool. The weather has been so cool that few sheep are as yet clipped, and in fact the great majority are not even washed. The trade has not yet opened, and it is not safe to speculate on prices. The buyers, as usual, are talking down prices. But there will undoubtedly be an unusually brisk demand for the clip. Money never was so abundant in this country as at present, and there are many who are willing to invest in wool. Besides, all the wool dealers last year made money, and will be disposed to buy largely again this season. Fifteen thousand lbs. of selected fine fleeces were sold in Boston a day or two since at 45c per lb. The probability now is that the price of the present clip will be about 40 cents.

Beef cattle are half a cent per lb. higher; milch cows and veal calves are in better demand. Hogs are also higher. Sheep have declined.

Butter is lower. There is a large supply of "grease butter" on hand. "Choice yellow" brings from 16 to 18c per lb, "Grease butter" from 7 to 8c.

Good cheese is scarce and in demand, but poor is plentiful. Choice new 7¼@8c.

Eggs plenty at 9@10¼c per doz.

American Short-horns in England.—We noticed some months since that Saml. Thorn, of Duchess Co., N. Y., had sent several head of his celebrated Short horn cattle to England, and that they were sold there at a high price. Mr. Thorn has sent out another lot, and these too were immediately puachased at high figures. One two-year bull, bred by James O. Sheldon, of Geneva, N. Y., was sold to the Hon. Col. Pennant, M. P., of Penshyr Castle, Bangor, for 600 guineas, or over $3,000! Another yearling bull sold for 400 guineas. The Duke of Devonshire purchased another at 400 guineas.

Partial List of Gifts Given at the Metropolitan Gift Book Store, No. 26 Buffalo Street, Rochester, N. Y., During the Month of April.—22 Gold and Silver Watches, 16 Engraved Silver Plated Ice Pitchers, 31 Silver Plated Vegetable Castors, 11 Silver Engraved Cake Baskets, 9 Silver Card Receivers, 26 Gold Lined Silver Cups, 13 Gold Guard Chains, 22 Gold Band Bracelets, 9 Silver Wine Pitchers, 16 Gold Lined Salt Castors, 6 Coffee Urns, heavily Engraved, Silver Plated, 8 Silver Tea Pots, 3 Silver Tea Sets, 137 Sets Tea and Table Spoons, 72 Sets Silver forks, besides over 1800 other articles of value. A Gift accompanies each book, varying in value from 50 cents to $100. Descriptive Catalogues mailed free to any address upon application. The largest stock of books to select from in the city.

A New Book on the Grape.—Mr. John Phin, of this city, has written an excellent work on the culture of the grape in the open air. We have not space this month to notice it as its merits deserve, but would call the attention of our readers to the book, an advertisement of which will be found in another column. Every one interested in the culture of the grape will read it with pleasure and profit.

Look Out for the Tree Peddlers.

The editor of the *Illinois Farmer* exposes some of the tricks resorted to by the tree peddlers in the West.

"A half a dozen men residing in Illinois or otherwheres, enter into an agreement to sell trees; they get up a catalogue headed the 'Rochester Nurseries, by J. Jones & Co.,' or the 'Dayton, Ohio, Nurseries of John Frank & Co.' With these catalogues they travel for orders, in the meantime one of the number looks after the trees to fill the orders. An Iowa nursery is purchased to supply the apple trees and other standard fruits, which are labelled to suit the wishes of customers; a row of Rambo or Sweet June going out under twenty different names. The ornamentals are procured, in most instances, further east, sometimes at Rochester or Syracuse, the orders are duly packed—marked to destination with the imposing label 'From Rochester Nurseries,' or 'Dayton Nurseries,' as the case may be. Some of these packages go to the next station, some of them to the same village, and others longer distances. Central and Western Iowa thus purchase thousands of dollars worth of Iowa grown trees, while Missouri, Kansas, and the river counties of Illinois, come in for a share. The tree peddler is not confined to the east, for we have a good supply of them here, and we believe that the largest number of this class of petty swindlers are residents of the west, and deal largely in western trees.

"There is another class of men for whom we have more respect, and those are the agents of reliable nurseries both east and west. These men receive a commission in most cases and sell at regular prices, and the principals are responsible for the correctness of the varieties sent out."

There is no class of scoundrels for whom we have a greater contempt than dishonest tree peddlers. If you buy a galvanized watch, that will go only when it is carried, you are cheated by just the price paid for it. But if you buy worthless trees, you are cheated, not only out of the money paid for them, but out of all the labor and expense of cultivating them for years.

Farmers have it in their power to prevent these frauds. When a tree peddler comes into a town or village, purporting to be agent for the "Rochester Nurseries of J. Jones & Co.," let some of our readers drop us a line inquiring whether there is such a nursery firm, and whether the man is an authorized agent. We will cheerfully do all that we can to aid in exposing these shameful impositions.

There are many honorable men engaged in selling trees, and these should be encouraged. We are safe in asserting that our leading Rochester nurserymen are too honorable and high-minded to lend themselves for a moment to encourage impositions on the farmers and fruit growers of the country. Mistakes may occur in this business as in all others, but on the whole such firms as Ellwanger & Barry, H. E. Hooker & Co., C. W. Seelye, Frost & Co., John Donnellan & Co., Hooker, Farley & Co., and many others, undoubtedly furnish trees true to name and of good quality. Parties purchasing trees and plants from an authorized agent of any of these nurseries may depend on fair and honorable dealing.

Drain-Tile Machine.—Having witnessed the operation of one of the Drain-Tile Machines manufactured by Mr. A. Latourette, of Waterloo, Seneca Co., N. Y., we can confidently recommend it. We know of no machine that turns out tile so rapidly. We could wish that one or more drain tile machines were at work in every county in the United States and Canada. The advantages of underdraining are now universally admitted, and so far as our experience and observation extend, it is much cheaper to underdrain with tile or pipes than with stone. The labor of digging the drains is much less, and a properly laid tile drain will work much better and last longer than a stone drain, as commonly constructed. We believe all who have used tiles will bear us out in this assertion.

One of the drawbacks to the general introduction of underdraining, is the difficulty in many sections of procuring tiles at sufficiently low rates. They are a heavy article, and can not be transported long distances without great expense. It is therefore desirable that the tiles should be made in the vicinity where used, and we can not but think it would pay any enterprising man, in almost any agricultural region, to purchase a machine and manufacture tiles. A supply will create a demand. And when once a farmer begins to underdrain, he rarely stops as long as he has a wet spot on the farm.

The cost of one of Mr. Latourette's large machines is $300. It makes all sizes and shapes of tiles and pipes, from 1¼ inches to 12 inches. We are assured that it will make 100 rods of 2-inch tile per hour, and from what we have seen of its operation we do not doubt the fact. Certainly it turns out tiles faster than any machine we have ever seen in this country or in England. The machine is constructed wholly of iron. It grinds the clay and turns out the tiles at both ends at one operation. It can be worked with one heavy or two light horses.

Mr. Latourette also manufactures a hand drain tile machine, that turns out 400 two-inch tile per hour. Price $175.

Those wanting a good machine can not do better than to put themselves in communication with Mr. Latourette. We feel confident that his machine will give satisfaction. Underdraining lies at the very foundation of all agricultural improvement, and we are glad to learn from Mr. Latourette that the demand for machines is greatly on the increase. He informs that in some places a number of enterprising farmers unite together in purchasing a machine, and we can not but think that such a practice could be extended in many sections with great advantage.

The Genesee Farmer—Morgan Horse Wanted.—Dr. James Stimson, of St. George, C. W., writes us as follows: "My "*Farmers*" for 1860 and '61 are bound in two vols., half calf, and *are among the most valued books of my library*. It would be a great pleasure to me to possess all the back volumes uniformly bound in half calf. One of the greatest recommendations of your paper, is the fact that each year makes a book of very convenient size, worth—well, the worth of it never can be told; abounding, as it does, in valuable information, suggestions and hints, the knowledge of which saves dollars upon dollars *to such farmers as take the papers*. The fact that you have

paid out, for clubs of Canadian subscribers, premiums to the amount of $150 during the first month of this year (and still hold out to us great inducements to subscribe), proves that you are generous, and have the success of farmers at heart,—that Canadian farmers (some of them at least) are alive to their own interests—and that, in return for your efforts in their behalf, they are determined to *support a purely agricultural paper*, the best of its kind in America.

Do you know of any person owning a *genuine* Morgan horse, which has a good pedigree and is a first-rate roadster, who could be induced to come to this part of the country with his horse next season on a venture?

The farmers of this and the surrounding counties are, as a rule, well supplied with horses for agricultural purposes; but when they come to sell their colts, they seldom realize good prices, because said colts "can't *go*." They are well able to pay for a good horse, if they can be convinced that it will pay; and no better way of convincing them occurs to me than to persuade them to make the experiment *just once*.

In my opinion, such a horse as I have described, coming among us well recommended by you or some other responsible parties, would be well supported. His owner would certainly confer a great benefit upon our farmers, by improving their stock in the very point where it needs and is most susceptible of improvement."

SOAKING AND SOWING SORGHUM SEED.—In the *Genesee Farmer* for April we alluded to some experiments made by the Rev. A. MYERS, of Bucyrus, Ohio, in regard to the best time of planting the Chinese sugar cane seed. Mr. M. thinks that it should rarely, if ever, be planted before the 20th of May, and as it is essential, in order to make sugar, to have the plants fully matured, it becomes a question of great importance to ascertain the best means of causing the seed to germinate rapidly after it is put in the ground. Mr. MYERS has kindly sent us his method of preparing the seed to accomplish this result, which is as follows:

"Take the quantity of seed to be planted any one day, and having prepared *boiling* water pour it over the seed, stirring, that all the seed may be equally heated; let it remain in the *boiling water* 1¼ minutes; then cool down by adding cold water to a luke-warm state. Enough boiling water must be poured on to swim the seed.

"A good preparation to accompany the above is 1 lb. of chloride of lime and 4 oz. vitriol to 1 peck of seed.

"With the above process I have brought the cane up so that the rows were visible across the field in three or four days."

Mr. M. sends us the details of his experiment, which seem to sustain his opinion.

Inquiries and Answers.

PUMPKIN SEEDS.—I wish to know whether pumpkin seeds are good to feed to hogs, fat cattle and store cattle. Some of our neighbors say they are, and some say they are not. Will some of your correspondents give me some light on the subject?—D. B. N., *Union Mill, Erie Co., Pa.*

SEVERAL INQUIRIES.—Will some of your numerous correspondents furnish information as to the following through the *Genesee Farmer*:

1st.—How to make a good farm roller.

2d.—Have you used the Wethersfield Seed Sower? If so, can it be adjusted so as to drill seeds evenly, and at an equal distance apart, from the size of ruta bags to beans?

3d.—Is there no more easy or expeditious way of harvesting peas than mowing with a scythe, or "pulling them," as the Canadians call it?

4th.—Would kyanizing chestnut shingles have a tendency to toughen them, so as not to be so liable to split?

5th.—It would save many a trip to the village grocery, when some one is sick, and furnish a good, wholesome part of the farmer's dinner to be carried with him to the distant field, if every family knew how to make water and butter crackers.—B., *Cooperstown, Pa.*

CANADA THISTLES.—Will some of your correspondents oblige me by giving, through the *Farmer*, the best method of destroying or keeping under Canada thistles?—J. L., *King, C. W.*

ROOT CULTIVATOR.—Noticing in the May number of the *Genesee Farmer* an article on the cultivation of carrots, on page 149, from the pen of A. M. H., in which he says he has got up a hand cultivator which works admirably. Now, will A. M. H. be kind enough to furnish me with a description of said cultivator? I am desirous of availing myself of every facility for the cultivation of roots, in which I am engaged quite extensively.—JOHN KIEVELL, *Greensville, C. W.*

RENNET FOR SCOURS.—(WM. HAINES.) We have never tried this remedy, but it is well spoken of. Soak the rennet in warm water for twenty-four hours, and give six tablespoonfuls before the calf is fed. Cattle should have a larger dose. Milk thickened in wheat-flour is our usual remedy for mild cases of scours in sheep.

LIMING SHINGLES.—(JOHN HENSHAW.) The object of liming shingles is to increase their durability, and also to render them less liable to take fire. The process is not difficult, and fully compensates for the labor. It is simply soaking the shingles for a few hours in a solution of lime, salt, and lye from ashes. We do not know the proportions, but as the water will only take up a limited quantity of these ingredients, there is no danger of getting it too strong.

LETTING SHEEP GO UNSHORN FOR TWO YEARS.—(JOHN THOMPSON.) We have had no experience on this point. The only experiments that recur to us at this moment are those made by Lord WESTERN on British Merinoes. He let some of his sheep go unshorn for three years, and the result was that the weight of the wool from these sheep at the end of that time considerably exceeded the aggregate from an equal number shorn annually, the treatment of the two lots being in other respects the same. The quality of the fibre had not been impaired, while the greater length of the staple made it more valuable, because fitting it for a greater diversity of purposes.

SOILING MILCH COWS.—(R. T.) We do not think it will pay you. In the neighborhood of large cities, where land is high, it might be profitable, but in your case the saving of food and the increased quantity of manure, will not, we think, pay for the extra labor. One thing *will* pay. Provide a supply of green corn fodder for the cows when the pastures become dry. Sow it at once, in drills, three feet apart. Make the drills with a one-horse plow, and scatter the seed in the drills quite thickly, say forty grains to the foot, or about two and a half bushels per acre. Keep it clean by running a horse-cultivator between the rows. In this way, if the land is rich, you will get a great crop. This is a far better way than sowing broadcast.

Special Notices.

RHODES' SUPERPHOSPHATE.—THE STANDARD MANURE.—Manufactured under the supervision of the eminent manufacturing and analytical chemists, ROBERT B. POTTS and FREDERICK KLETT. The Sulphuric Acid is produced on a large scale at the works at Camden, N. J.

Guaranteed perfectly pure and free from all adulteration. Dr. EVAN PUGH, President Penn. Farm School, in his Report on Artificial Manures, published in *Country Gentlemen* March 27th, 1862, says: "RHODES' is the cheapest American superphosphate 'and if Mr. RHODES will sell under legal guarantee an article to "contain even 14 or 15 per cent of anhydrous phosphoric acid in "combinations soluble in water (with ten minutes boiling), his "manure would deserve unqualified recommendation as one of "the very best superphosphates manufactured in the world, and "very much better than any manufactured in this country."

The following report of analysis of *one thousand* (1,000) tons RHODES' manure, made by G. A. LIEBIG, shows even higher results than Dr. PUGH requires;

BALTIMORE, February 28, 1862.

MESSRS. B. M. RHODES & Co.—*Gents:* I have analyzed the two samples of RHODES' manure which were averaged from a lot of one thousand (1,000) tons at the works, and sent to me by Messrs. POTTS and KLETT.

Sample No. 1 contains of phosphoric acid soluble in water 16.84 per cent., equal to 27.75 of bi-phosphate of lime.

Sample No. 2 contains 16.44 per cent., which is equal to 27.10 of bi-phosphate of lime.

Both of the samples came fully up to the standard qualities of your Superphosphate. Very respectfully,

G. A. LIEBIG, Ph. D.

Agriculturists and dealers apply to B. M. RHODES & Co., office 82 South street, Baltimore. Also, HENRY E. MORING, General Agent for New York and New England, 97 Pearl street, near Hanover Square, New York.

ADVERTISEMENTS.

MOLE PLOWS—By J. DUNHAM, Ithaca, N. Y 3—tf

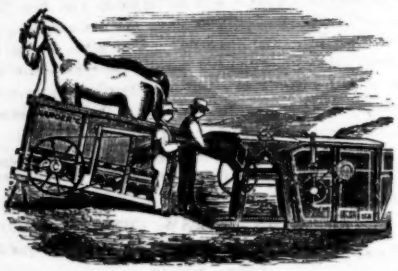
$175 REWARD—For procuring three hundred paying subscribers to HALL'S JOURNAL OF HEALTH for 1862. $1 a year. $100 for two hundred subscribers.

Dr. W. W. HALL, New York.

BUY THE BEST.

AT THE

EMPIRE AGRICULTURAL WORKS.



THE undersigned manufacture CHANGEABLE ENDLESS CHAIN RAILWAY

HORSE POWERS,

Combined Threshers and Cleaners.

THRESHERS, SEPARATORS. WOOD SAWS, &c.

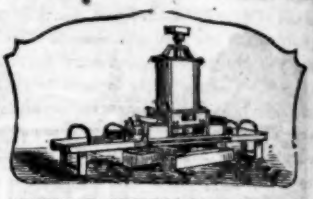
These Powers produce more Power with less elevation, and are operated with greater ease to the team than any other, requiring very slow travel of horses, being only about 1¼ miles per hour when doing a good fair business, which is 400 to 500 bushels of oats per day, or half that quantity of wheat or rye

The Thresher and Cleaner runs easy, separates the grain perfectly clean from the straw. Cleans quite equal to the best Fanning Mills, leaving the grain fit for mill or market, and is capable of doing a larger business without waste or clogging than any other two horse Cleaner before the public.

☞ For price and description, send for circulars, and satisfy yourself before purchasing. Address R. & M. HARDER.

Cobbleskill, Schoharie Co., N. Y.

THE BEST TILE MACHINE.



SMITH & WINEGAR'S PATENT,

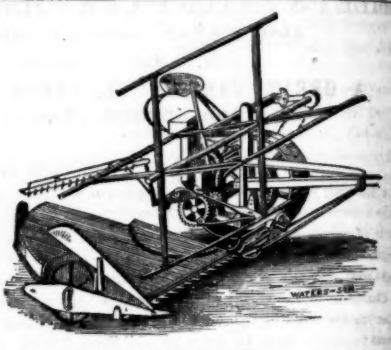
With La Tourette' Improvements.

THE above engraving represents a Drain Tile Machine which has been used for years, and, with its recent improvements, is undoubtedly the best and most durable Tile Machine in America. It performs the whole labor of grinding the clay, screening it to free it from gravel, and presses it in tile at the same operation, and may be propelled by either water, steam, or horse-power. It makes all sizes and shapes of tile and pipe, from 1½ to 12 inches, and moulds 100 rods of 2-inch tile per hour. The machine is simple in construction, durable (being made of iron), and not liable to get out of order. In the great essentials of SIMPLICITY, CAPACITY and DURABILITY *it has no equal.* It was awarded the First Premium at the Ohio State Fair in 1860, which award was approved by a special committee of practical tile makers appointed by the State Board of Agriculture at the special request of interested parties, who were dissatisfied with the decision of the first committee.

For further particulars, or illustrated circular, addres

A. LA TOURETTE, Jr., Agent,

Waterloo, Seneca Co., N. Y.



The New York Self-Raking Reaper and Mower,

IS the best and most economical Harvester of Grain and Grass yet invented. Only one hand is necessary to manage it, and it requires less labor to bind after it than after the best hand-rakes.

It is simple and durable, not liable to get out of order, and the saving in labor by the self-rake alone will pay for the entire machine before it is worn out.

All the gearing is hung on an iron frame, and the cutter-bar is made of steel.

For Circulars and other information, apply to the manufacturers, SEYMOUR, MORGAN & ALLEN.

May—2t Brockport, Monroe Co., N. Y.

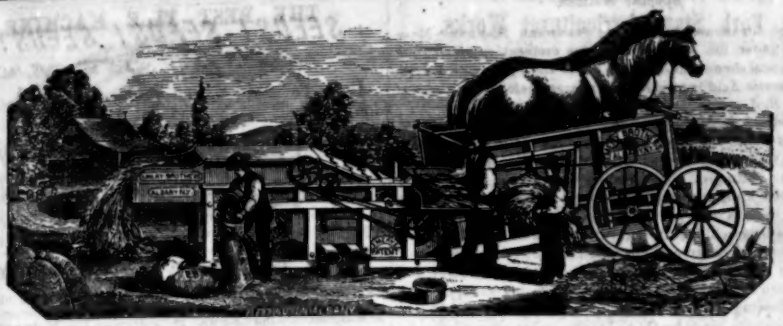
NOW READY.

OPEN AIR GRAPE CULTURE:

A PRACTICAL Treatise on the Garden and Vineyard Culture of the Vine, and the MANUFACTURE OF DOMESTIC WINE. Designed for the use of Amateurs and others in the Northern and Middle States Profusely illustrated with New Engravings from carefully executed designs, verified by direct practice. By JOHN PHIN, author of "Essay upon Open Air Grape Culture," to which was awarded the First Premium of the American Institute. To which is added a selection of Examples of American Vineyard Practice, and a carefully prepared description of the celebrated "Thomery System of Grape Culture."

☞ Price, One Dollar. Sent free of postage on receipt of price. *Every person who has a grape vine should own this book.* Address D. M. DEWEY, AGT.,

Rochester, N. Y.



ALBANY AGRICULTURAL WORKS,

WAREHOUSE AND SEED STORE.

EMERY BROTHERS,

Nos. 62 & 64 State Street,

ALBANY, N. Y.

PATENTEES AND MANUFACTURERS OF

EMERY'S PATENT CHANGEABLE RAILROAD HORSE POWER.

ALSO, LEVER POWERS FOR FOUR, SIX AND EIGHT HORSES,

OF NEW AND SUPERIOR CONSTRUCTION, TOGETHER WITH

A GREAT VARIETY OF LABOR SAVING AGRICULTURAL MACHINERY.

AND GENERAL DEALERS IN IMPLEMENTS AND SEEDS.

HORSE POWERS.

It has ever been the aim of the Proprietors to make none but the first class of work, and always to use the best materials. In the construction of their Horse Powers they have endeavored to adapt them most readily and advantageously to the great variety of purposes required by the Farmer and Mechanic. During the harvests of 1860 and 1861 they have introduced and adopted the use of MALLEABLE IRON in the construction of the ENDLESS CHAIN of the Horse Powers, thereby lessening the weight over one-half, while the strength and durability is more than doubled as compared with the ordinary Cast Iron Endless Chains in universal use by other makers. Great advantage is gained by this lightness in handling and transportation, and lighter friction when in operation, while the malleable iron is much more expensive and machines more valuable, and no additional charge is made for the improved Horse Powers. The same considerations have guided them in the construction and adaptation of the various Machines made and sold by them, to be driven by the Power, in calculating their various velocities, forces, pulleys and gears, so as to enable them to operate to their maximum efficiency, which is the secret of their great success.

THRASHING MACHINES.

WITH SEPARATING AND CLEANING ATTACHMENT,

Combined and adapted for all kinds and conditions of Grain, &c.

This machine is the greatest success in its line yet produced. It can be operated with two horses as easily, and with equal results, as the ordinary thrashing machine without the cleaning attachment; while its capacity adapts it equally well to the force of four or six horses. It will thrash perfectly clean from the straw, and clean the grain for market, without any wastage in any part of the process. It is complete in one frame—very compact and simple—runs light, still, and without any concussion from its moving parts. It has been very extensively used during the past three harvests, and its superiority over any others in the market established beyond question, and, considering its capacity and cost of construction, it is at least fifty per cent cheaper than any other similar machine in use.

CLOVER MILLS AND CLEANERS.

This is believed to be one of the best machines for the purpose ever made: can be driven by one, two or more horses, at a high or slow velocity, and do equally good work, and with wet and bad as well as good condition of the clover chaff. It cleans the seed, and delivers it fit for market at the same operation.

CIDER MILLS,

For Power and Hand use, with and without Press attached. These Mills and Presses are of a superior style and utility to any others in use.

SAWING MILLS.

With Circular Saws, for cutting firewood, slitting boards, plank, &c., for fencing and building purposes; also with Machine Crosscut for cutting logs for wood, shingles, staves, &c.; also Mills for making shingles.

STALK AND STRAW CUTTERS,

For Horse Power—a strong and durable machine, and adjustable to any length of cut.

FEED MILLS,

For grinding all kinds of Grain for Feeding, as well as corn in the ear when desired. Several sizes, and with or without sieves and bolts attached.

ILLUMINATED CATALOGUE.

The Proprietors have completed their new Catalogue—the most complete and beautifully illustrated work ever published by any manufacturer, embracing a great number and variety of finely executed and carefully prepared

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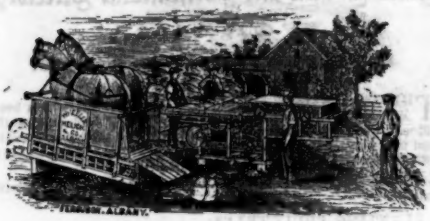

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RAILWAY CHAIN HORSE POWERS,

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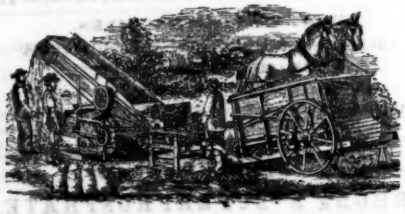
AS SHOWN IN CUT BELOW.



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Circulars containing List of Prices, and full description and Cuts of each Machine, with statement of their capacities for work, will, on application, be sent by mail, free.

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BY MAIL, BY MAIL,

In Large Quantities by Express or R. R.

Extra Early Cedo Nulli Peas, best for Summer planting	per qt.	20c.	
*Madras (edible pod) Radish	per pkt.	10c.	
French Scarlet Turnip Radish, may be sown at any time with success during the summer	per lb. 75c.	p. oz.	10c.
Black Fall or Spanish Radish	per lb. 75c.	per oz.	10c.
*Rose Colored Chinese Winter do., splendid for late sowing, keeps well all winter	"	"	20c.
*Early Curled Silesia Lettuce, the best for succession and Summer crops	"	"	20c.
Fine Long Orange Carrot	per lb. 75c.	"	10c.
Red Altringham do	" 75c.	"	10c.
Corn Salad or Fetticus, excellent for Fall and Winter use	" 75c.	"	10c.
*New Speckled Lima Beans (extra fine)	per pkt.		20c.
Horticultural Pale or Speckled Cranberry Beans	per qt.		20c.
Early Mohawk Bush Beans (the most productive)	"		30c.
*Fine Long Green Cucumber for pickles or table use	per lb. $1.50	per oz.	10c.
*N. J. Hybrid Cucumber (extra long variety)	"	"	30c.
*West India Gherkin for pickling	per pkt. 5c.	"	40c.
*Fine Green Curled Endive for fall and winter Salad	"	"	30c.
*True Hubbard Squash	"	"	30c.
*Honolulu Nectarine do	"	"	30c.
*Seven Year Pumpkin, very best late keeping sort	"	"	30c.
*White Leghorn Squash, a fine variety, growing to weigh 150 lbs	per pkt.		20c.
*New White Japan Melon, the very earliest in cultivation, and of superior flavor	"	"	20c.

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Early White Dutch, finest early variety	per lb. 75c.	p. oz.	10c.
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English Green Globe	" 50c.	"	10c.
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White French—We recommend this as the finest and most productive winter variety in cultivation either for family use or for field culture	" 75c.	"	10c.
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*Beautiful Collections Phlox Drummondii (5 distinct sorts)					40c.
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